



Operations Inspector Handbook

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FOREWORD

This Operations Inspector Manual is one in a set of manuals forming the technical guidance provided for the conduct of aviation safety oversight by the Civil Aviation Authority of Sri Lanka (CAASL). These manuals are produced to provide the information, policy and procedures necessary to perform tasks in support of the Air Navigation Regulations (ANRs) and Civil Aviation Act. No. 14 of 2010.

All personnel assigned by the CAASL to perform tasks that are addressed in this manual shall comply with these policies and procedures in the performance of their duties. All other relevant working documents relating to these specific tasks and responsibilities will also be considered. If there is any conflicting guidance, the employee should advise management in writing. It is a goal of the CAASL to provide guidance that empowers personnel to conduct their tasks in a standardized manner.

This manual is subject to regular review and improvement as approved by the Director General. The CAASL has authority to amend the manual, as necessary, to conform to the Sri Lanka Safety Oversight Program.

This manual will be treated as a dynamic document. As a result of amendments to the Sri Lanka Civil Aviation legislation and the progress of aviation safety practices, there will be the need for amendments.

Contribution of meaningful ideas for the improvement of the content of this manual is therefore encouraged and requested from all users.

H. M. C. Nimalsiri
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Chief Executive Officer

13th June 2018
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ABBREVIATIONS

The following acronyms are used in this manual—

1. AOC – Air Operator Certificate
2. ACARS – ARINC Communications Addressing and Reporting System
3. AFM – Aircraft Flight Manual
4. AMO – Approved Maintenance Organization
5. ANR – Air Navigation Regulation(s)
6. ARINC – Aeronautical Radio, Incorporated
7. ATO – Approved Training Organization
8. CAASL – Civil Aviation Authority of Sri Lanka
9. CCR – Completed Certification Report
10. CPC – Certification Project Coordinator
11. ETOPS – Extended Twin Engine Operations
12. EFB – Electronic Flight Bag
13. FS – Flight Safety
14. GID – General Inspection Database
15. ICAO – International Civil Aviation Organization
16. LOFT – Line Oriented Flight Training
17. MCE – Minimum Certification Events (associated with certification plans)
18. MRAI – Minimum Required Annual Inspection
19. PASI – Pre-Application Statement of Intent
20. RFM – Rotorcraft Flight Manual
21. RVSM – Required Vertical Separation Minima
22. SOE – Schedule of Events

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DEFINITIONS

When the following terms are used in the Standards and Recommended Practices for operation of aircraft in international commercial air transport, they have the following meanings:

Aerial Work

An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

Aerodrome

A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Aerodrome Operating Minima

The limits of usability of an aerodrome for:

- 1) take-off, expressed in terms of runway visual range and or visibility and, if necessary, cloud conditions;
- 2) landing in precision approach and landing operations, expressed in terms of visibility and / or runway visual range and decision altitude/height(DA/H) as appropriate to the category of the operation; and
- 3) landing in non-precision approach and landing operations, expressed in terms of visibility and / or runway visual range, minimum descent altitude / height (MDA/H) and, if necessary, cloud conditions.

Aeroplane

A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Aircraft

Any machine that can derive support in the atmosphere from the reactions of the air, other than the reactions of the air against the earth's surface.

Air Operator Certificate (AOC)

A certificate authorizing an operator to carry out specified commercial air transport operations.

Alternate Aerodrome

An aerodrome to which an aircraft may proceed, when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing. Alternate aerodromes include the following:

Take-off Alternate

An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

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En-route Alternate

An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while En route.

Destination Alternate

An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

Note – The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.

Cabin Attendant

A crewmember who performs in the interest of safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.

Commercial Air Transport Operation

An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

Crew Member

A person assigned by an operator to carry out duties on an aircraft during flight.

Cruising Level

A level maintained during a significant portion of a flight.

Dangerous Goods

Articles or substances which are capable of posing significant risk to health, safety or property when transported by air.

Note – Dangerous goods are classified in Annex 18, Chapter 3.

Decision Altitude (DA) or Decision Height (DH)

A specified altitude or height in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

Note 1 – Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.

Note 2 – The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to, have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category, III operations with a decision height the required visual reference is that specified for the particular procedure and operation.

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Note 3 – For convenience where both expressions are used they, may be written in the form “decision altitude/height” and abbreviated “DA/H”

Emergency Locator Transmitter (ELT)

A generic term describing equipment which broadcasts distinctive signals on designated frequencies. Depending on application, may either sense a crash or operate automatically or be manually activated. An ELT may be any of the following:

Automatic Fixed ELT (ELT (AF))

An ELT which is permanently attached to an aircraft.

Automatic Portable ELT (ELT (AP))

An ELT which is rigidly attached to an aircraft but readily removable from the aircraft after a crash.

Automatically Deployable ELT (ELT (AD))

An ELT which is rigidly attached to aircraft and deployed automatically in response to a crash. Manual deployment is also provided.

Survival ELT (ELT(S))

An ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and activated by survivors. Automatic activation may apply.

Flight Crew Member

A licensed crew member charged with duties essential to the operation of an aircraft during flight time.

Flight Duty Period

The total time from the moment a flight crew member commences duty, immediately subsequent to a rest period and prior to making a flight or a series of flights, to the moment the flight crew member is relieved of all duties having completed such flight or series of flight.

Flight Manual

A manual associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

Flight Plan

Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight Recorder

Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

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Flight Time

The total time from the moment an aircraft first moves under its own power for the purpose of the taking off until the movement it comes to rest at the end of the flight.

***Note** – Flight time as here defined is synonymous with the term “block to block” time or “chock to chock” time in general usage which is measured from the time an aircraft moves from the loading point until it stops at the unloading point.*

General Aviation Operation

An aircraft operation other than a commercial air transport operation or an aerial work operation.

Instrument Approach and Landing Operations

Instrument approach and landing operations using instrument approach procedures which are classified as follows:

Non-precision Approach and Landing Operations

An instrument approach and landing which does not utilize electronic glide path guidance.

Precision Approach and Landing Operations

An instrument approach and landing using precision azimuth and glide path guidance with minima as determined by the category of operation.

Categories of precision approach and landing operations-

Category I - (CAT I) Operation.

A precision instrument approach and landing with a decision height not lower than 60 m (200 ft), and with either a visibility not less than 800 m or a runway visual range not less than 550 m.

Category II - (CAT II) Operation

A precision instrument approach and landing with a decision height lower than 60 m (200 ft), but not lower than 30m (100 ft), and a runway visual range not less than 350 m.

Category IIIA- (CAT IIIA) Operation

A precision instrument approach and landing with:

- (a) A decision height lower than 30 m (100 ft) or
- (b) A runway visual range not less than 200 m.

Category III B-(CAT IIIB) Operation

A precision instrument approach and landing with:

- (a) A decision height lower than 15 m (50 ft) or no decision height; and
- (b) A runway visual range less than 200 m but not less than 50 m.

Category III C – (CAT IIIC)

Operation a precision instrument approach and landing with no decision height and no runway visual range limitations.

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Note – Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach and landing operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT II would be considered a CAT II operation).

EFB

Electronic Flight Bag

Instrument meteorological conditions (IMC).

Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling *, less than the minima specified for visual meteorological conditions.

Note – The specified minima for visual meteorological conditions are contained in Chapter 4 of Annex 2.

Large Aeroplane

An aeroplane of a maximum certificated take-off mass of over 5 700 kg.

Master Minimum Equipment List (MMEL)

A list established for a particular aircraft type by the manufacturer with the approval of the State of Manufacturer containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

Maximum mass

Maximum certificated take-off mass.

Minimum Descent Attitude (MDA) or Minimum Descent Height (MDH)

A specified altitude or in a non-precision approach or circling approach below which descent must not be made without the required visual reference.

Note 1 – Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation

Note 2 – The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.

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Note 3 – For convenience when both expressions are used they may be written in the form “minimum descent altitude height” and abbreviated “MDA/H”.

Minimum Equipment Lists (MEL)

A list which provides for the operation of aircraft, subjected to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

Night

The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the appropriate authority.

Note – Civil twilight ends in the evening when the centre of the sun’s disc is 6 degrees below the horizon and begins in the morning when the centre of the sun’s disc is 6 degrees below the horizon.

Obstacle Clearance Altitude (OCA) or Obstacle Clearance Height (OCH)

The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable used in establishing compliance with appropriate obstacle clearance criteria.

Note 1 – Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.

Note 2 – For convenience when both expressions are used they may be written in the form “obstacle clearance altitude height” and abbreviated “OCA/H”.

Operational Control

The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

Operational Flight Plan

The operator’s plan for the safe conduct of the flight based on considerations of aeroplane performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

Operations Manual

A manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties.

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Operator

A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Pilot-in-Command

The pilot responsible for the operation and safety of the aircraft during flight time.

Pressure Altitude

An atmospheric pressure expressed in terms of altitude, which corresponds to that pressure in the standard atmosphere **.

Required Navigation Performance (RNP)

A statement of the navigation performance accuracy necessary for operation within a defined airspace.

Rest Period

Any period of time on the ground during which a flight crew member is relieved of all duties by the operator.

RNP Type

A containment value expressed as a distance in nautical miles from the intended position within which flight would be for at least 95 per cent of the total flying time.

Example – RNP 4 represents a navigation accuracy of plus or minus 7.4 km (4 NM) on a 95 per cent containment basis.

Runway Visual Range

The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface marking or the lights delineating the runway or identifying its centre line.

Small Aeroplane

An aeroplane of a maximum certificated take-off mass of 5 700 kg or less.

State of Registry

The State on whose register the aircraft is entered.

***Note** – In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See the “Registration of Aircraft Operated by International Operating Agencies” (Doc 8722)*

State of the Operator

The State in which the operator’s principal place of business is located or, if there is no such place of business, the operator’s permanent residence.

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Synthetic Flight Trainer

Any one of the following three types of apparatus in which flight conditions are simulated on the ground.

A Flight Simulator

An equipment that provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft which are realistically simulated.

A Flight Procedure Trainer

Provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc., aircraft systems, and the performance and flight characteristics of aircraft of a particular class.

A Basic Instrument Flight Trainer

Is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions.

Visual Meteorological Conditions (VMC)

Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, * equal to or better than specified minima.

***Note** – The specified minima are contained in Chapter 4 of Annex 2.*

As defined Annex 2.

As defined Annex 8.

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Chapter 1 - THE OPERATIONS SECTION

1.1 INTRODUCTION

- 1.1.1 The Operations Division of the CAASL has been formed to perform safety oversight functions of all Air Transport Operators in order to ensure safe and efficient commercial air transport services in the country. This surveillance covers, not only airlines operating scheduled services but also non-scheduled operators and General Aviation and includes both fixed wing aircraft and helicopters. The division will be responsible to carry out Surveillance Inspection of the system and Certification Checks of aircrew as a part of its regular inspection programme. The personnel of this division are responsible for carrying out all of the Safety Oversight Responsibilities assigned by the Convention of International Civil Aviation and its Annexes except for those elements that pertain to determining whether or not there is a need for a service and for determining financial viability of an operator or a potential operator. The issuance of a license to an operator or a potential operator is the prerogative of the Civil Aviation Authority Operations Section may provide information concerning potential operator's technical capabilities if asked to do so.
- 1.1.2 In order to accomplish these tasks qualified Civil Aviation Inspectors as mentioned under paragraph 1.3.2 will be appointed to the Operations Section of Civil Aviation Authority, who will conduct surveillance, inspections and checks as per the policies and procedures laid down by the DGCA.

1.2 STATUTORY AUTHORITY

- 1.2.1 The Operations Section is organized as a component part of the CAA. It is authorized by the government of Sri Lanka and is charged by the Director General of Civil Aviation to carry out required functions.
- 1.2.2 The activities of the Civil Aviation Inspectors of the Operations Section will be governed by the following:-
- Air Navigation Act, for exercising the duties and functions under the Air Navigation Regulations (ANR) Standards and Procedures.
 - Gazette Notifications issued for pertinent aviation references.
 - Implementing Standards issued in compliance to ICAO Annexes. Aviation Safety Notices, Directives and directions as applicable.
 - Flight Operations Inspector Manual and all other Material issued by CAASL
 - Other relevant circulars and instructions that may be issued by DGCA from time to time.

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1.3 STAFFING REQUIREMENTS

1.3.1 General

- a. Staffing of the Operations Division with a sufficient number of suitable Civil Aviation Inspectors experienced, qualified and capable of accomplishing the wide range of activities covered in the Operations Inspector Hand Book is paramount to the success of the Safety Oversight Programme of the Civil Aviation Authority.
- b. Operations Inspectors must not only have the knowledge, experience and qualification to carry out their duties in a professionally sound manner, but also possess personality to win the respect and confidence of the operators. This would require a reasonable level of tact, understanding, firmness, impartiality, integrity and exemplary personal conduct both in the air and on the ground. How well they do this will be the real measure of their success as CAA Inspectors.

1.3.2 Strength of CAA Inspectors in the Operations Section

- a. The number of Inspectors required will be determined by the level of and the growth of aviation in the country. A periodic review will take place from time to time as required to determine whether or not there need to be a change in the number of inspectors employed.
- b. The following guidelines are considered to be the minimum number that is reasonable to carry out tasks assigned.
- c. One Flight Operations Inspector per approximately ten aircraft of a particular type taking in to consideration the number of operators that are operating and the complexity of the air operations as these would affect the workload.
- d. Because of the diversity of aircraft operating in General Aviation, the ratio mentioned in (a) above may not be feasible. In such cases, a ratio of one Flight Operations Inspector for ten aircraft (by judiciously combining two or more types) is considered suitable. Where qualified Inspectors are not available for a particular type, any Flight Operations Inspector may carry out any required check from the forward observer seat.

1.3.3 The following are the Civil Aviation Inspectors of the Operations Section:

- a. Director – Aircraft Operations
- b. Senior Civil Aviation Inspector (Aircraft Flight Operations)
- c. Civil Aviation Inspector (Aircraft Flight Operations)
- d. Senior Civil Aviation Inspector (Aircraft Cabin Safety)
- e. Senior Civil Aviation Inspector (Aircraft Ground Operations)
- f. Civil Aviation Inspector (Aircraft Ground Operations)
- g. Civil Aviation Inspector (Aircraft Cabin Safety)
- h. Civil Aviation Inspector (Aircraft Ground Operations)
- i. Designated Flight Operations Inspectors
- j. Designated Check Pilots

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1.3.4 THE INSPECTOR'S ROLE

- 1.3.4.1 It is a common mistaken perception that an inspector is personally responsible for the safety of the aviation community
- 1.3.4.2 It is true that inspectors can have significant influence on aviation safety in the areas where they are assigned if they stay within certain key parameters in their inspector's role.
- 1.3.4.3 But the responsibility for aviation safety rests with the operators of the aircraft.
- 1.3.4.4 It is the “certificate or licence holder” (Air Operator, Pilot, Engineer, Mechanic, Dispatcher, and Cabin Crew Member) who must ensure that they are always in compliance with the applicable regulations and relevant safety practices.
- 1.3.4.5 However the Inspectors does have a responsibility to ensure that the Air Operator and other certificate holders meets the minimum safety regulations and standards prescribed before issuing the certificate authorizing operations and the continuing validation of that certification.
- 1.3.4.6 All inspectors should be qualified to provide “auditor” and “administration” services on behalf of the government regarding the certification and continued validation processes. These roles are critical to the safety oversight system.

1.4 THE INSPECTORS' PRIMARY FUNCTION

- 1.4.1 The primary function of an inspector as described by aviation experts is to—
 - 1.4.1.1.1 Audit the aviation community (individuals, organizations and aircraft) for conformance with the laws and regulations applicable to aviation; and
 - 1.4.1.1.2 While doing that task, also audit for conformance to aviation industry relevant safety practices; and
 - 1.4.1.1.3 Make a technical decision; and
 - 1.4.1.1.4 Make a record of that audit and that decision.
 - 1.4.1.1.5 in charge of resolution of non compliance of safety standards by certificate holders.
- 1.4.2 The Inspector Data Base (when developed) is designed to allow the inspector to make a record of that audit and the decision through simplified web browser.



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1.4.3 DUTIES AND RESPONSIBILITIES OF THE EXECUTIVE STAFF OF FLIGHT OPERATIONS SECTION.

1.4.3.1 DIRECTOR AIRCRAFT OPERATIONS

a. Main Job Purpose:

To assist the Director-General of Civil Aviation (DGCA & CEO) to fulfil his responsibilities for initial certification of aircraft operators in Sri Lanka, continuing surveillance of such operators after certification and surveillance of airlines operating into and out of Sri Lanka to ensure safe, secure, efficient, regular and economical operation of air transport.

b. General Information:

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, and extreme weather conditions (approximately 50% of the work is out of doors). Incumbents may have to walk for extended periods of time over moderately rough terrain and/or on concrete or asphalt.

c. Nature and Scope of Duties;

To assist the Head of Division Flight Safety to perform his/her duties and functions involved with aircraft operations, which includes but not limited to the following.

- Periodic review of the primary and subsidiary legislation relating to Civil Aviation and take appropriate action to ensure that legal provisions are
- Adequate to manage the duties, functions and tasks effectively.
- Ensure the standard provisions contained in the Annex- 6 "Aircraft Operations" to the Convention on International Civil Aviation are given effect to and effectively enforced in Sri Lanka.
- Ensure that the Aviation Industry is informed timely in terms of Directives/Circulars and/or Aviation Safety Notices of all-important matters relating to item (i) & (ii) mentioned above.
- If /when differences to ICAO Standards are required to be implemented in Sri Lanka with regard to matters pertaining to ICAO Annex (6) and if the matter comes under the preview of the Section, take action to notify ICAO with the approval of DGCA (SL) (Article 38 of ICAO convention). Follow above when differences already implemented is withdrawn.
- Ensure that information relating to implementation and withdrawal of differences to ICAO Standards referred to above in Para (2) above are

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disseminated to ICAO and other relevant contracting States as specified in Annex 15.

- Ensure the required toolkits for efficient and effective monitoring of standards of Operations Services such as Application Forms, Certification Forms, Authorization sheets, Checklists; Survey Forms, Audit Forms etc. And equipment (if any) are readily available at the Section. This should include toolkits for efficient checking, surveying and/or auditing of Operations Section and facilities and personnel engaged in training, training curriculum procedures and methodology etc.
- Initiate action on certification of applicants for Air Operator Certificates and conduct continuous surveillance I monitoring of their activities after certification, from the Operations point of view to maintain the required standards.
- Advise the Head of Flight Safety division with regard to required amendments to the existing regulations or DGCA's published requirements in order to give effect to the latest technological advancements or to accommodate revisions to ICAO Annexes.
- Prepare Training Plan and Training Programmes for the entire staff in the Operations Section to enable them to perform the duties and functions that they are
- Entrusted and implement such programmes with the approval of DGCA / CEO.
- Maintain Training Records in respect of each member of the Staff attached to the Section.
- Attend to the administration of the staff attached to the Section including the Flight Operations Inspectors, Designated Flight Operations Inspectors and examiners.
- Prepare and implement the Flight Operations Inspection program as per the guidelines given in the Operations Inspector Handbook.
- Supervise the activities of the Flight Operations Inspectors and Designated Flight Operations Inspectors
- Ensure that inspections are carried out in accordance with the rules and regulations and/or published procedures with due regard to transparency and public acceptance
- Conduct periodic Regulatory Operations Audits on all certified operators, as outlined in the Audit Manual and take follow up measures.
- Conduct inspections on Ground Handling Operations and ensure that the service providers providing such services have adequate equipment, facilities, and trained personnel, procedures for provision of such facilities

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and services, to conduct operations safely and efficiently without compromising security aspects.

- Participate in the inspection(s) as and when possible. xv111. Select and appoint Designated Check Pilots as per the procedures outlined in the Designated Check Pilot Manual.
- Ensure all operators have adequate Safety Management System in place as required by ICAO Standard.
- Ensure proper maintenance of documents and records relating to safety oversight activities.
- Conduct Performance Evaluations on all staff attached to the Operations Section.
- Issue and update the Job Descriptions of all staff attached to the Section with the approval of the DGCA/CEO.
- Organize and update information in the CAA website pertaining to Operations Section.
- Ensure availability of written Office Procedures in respect of each activity being performed in the Operations Section.
- Maintain statistics relating to all important duties, functions or activities performed by the Operations Section.
- Performance indicators for the work being performed in the Section.
- Submit quarterly, bi-annual and annual reports to the Management concerning the work progress of the Operations Section.
- Prepare Annual Work Plan and Budget estimates for the Operations Section.
- Be accountable to the DGCA & CEO with regard to control of operational expenditure in the Section.
- Review and update all Manuals, Written Procedures and Handbooks issued by the Operations Section as and when required.
- Ensure the Operations Section of the CAA is organized, staffed, equipped and managed properly for the efficient and effective performance of the assigned duties, functions and tasks.
- Represent the Operations Section of the CAA at all internal or external meeting and any other meetings as authorized by DGCA & CEO.
- Maintain order & office discipline in the Operations Section.

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- Perform any other duties and functions as may be assigned by the DGCA & CEO

1.4.3.2 SENIOR CIVIL AVIATION INSPECTOR (Aircraft Flight Operations)

a. Main Job Purpose

To perform duties and functions as required by DGCA to ensure that Airlines operated into/out of Sri Lanka and Airlines registered in Sri Lanka wherever they may be are operated in compliance with the requirements stipulated by the Director-General of Civil Aviation.

b. General Information

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation and extreme weather conditions (approximately 50% of the work is out of doors). Incumbents may have to walk for extended periods of time over moderately rough terrain and/or on concrete or asphalt.

c. Nature and Scope of Duties

To support the Director Aircraft Operations in charge of the Section to inspect, survey and audit standards of Airlines to ensure that the stipulated regulatory and operational requirements published by DGCA are complied. To ascertain the above, the Senior Civil Aviation Inspector Aircraft Flight Operations shall perform the duties and functions, which include, but not limited to the following.

- Maintain all required documents both print and electronic in the Division consisting of registers, books, documents, manuals, ICAO annexes and other material relevant to operations of aircraft and update such, if and when relevant. Ensure that the Division's employees make use of the facility to update their knowledge and understanding of the subject for satisfactory performance of their assigned duties.
- Promptly notify the superior(s) about the occasions where local rules or procedures need to be amended to secure compliance with ICAO standards and take necessary follow up measures as instructed by the superior(s) for same.
- Represent Director Aircraft Operations in charge of the Section at forums if and when authorized.
- In the absence of Director Aircraft Operations perform his duties if and when authorized. Properly use delegated powers on such occasions.

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- Help the CAA in the development of draft Regulations, Rules, Implementing Standards or Directives for establishment, operation and surveillance, maintenance and certification of air operators in Sri Lanka.
- Help the CAA for the development and update of an Air Operator Certification Procedures Manual and Checklists for the guidance of the CAA staff and applicants for Air Operator Certificates in close liaison with the other Sections in the CAA.
- Receiving, Recording, Reviewing and processing in liaison with other concerned Sections in the CAA of formal applications for Air Operator Certificates.
- Support the Director in charge of the Section to process applications for issue of Air Operator Certificate for operation of Air Services in Sri Lanka.
- Support the Director in charge of the Section to renew, amend, suspend or cancel Air Operator Certificates as the case may be.
- Conducting surveillance over the Air Operator Certificate holders to ensure continued compliance with the initial certification conditions and requirements which includes but not limited to developing airline audits and inspections. (Procedures in the Operations Inspector handbook, Designated Check Pilot Manual and other CAA documents shall be complied with in performing safety inspections, surveillance and audits).
- Appointing and monitoring the competency of Designated Check Pilots nominated by Airlines.
- Carrying out aircraft En-route inspections, and simulator inspections/evaluations.
- Reviewing and granting approval for airline pilot training programmes and monitoring Pilot Proficiency Checks.
- Ensure presence of a Safety Management System in all certified airlines.
- Perform duties relating to foreign air operator certifications.
- Initial certification of applicants for self-handling or ground handling at airports and continued surveillance of their activities to maintain the required standards and efficiency, in liaison with Aerodrome Section.
- Ensure, maintaining an effective Airline Safety Management system by each air operator.
- Prepare and submit flying and surveillance programmes to the Director (Operations) about 10 days in advance of each month.

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- Submit reports about work performed in the previous month by the 10th of the current month.
- Perform all initial certification and continued surveillance on operators holding Air Operators Certificates issued by DGCA, in compliance with the procedures stipulated in the Operations Inspector Handbook.
- Ensure that requirements in the Operations Inspector Handbook in respect of certifications and surveillance of air operators are carried out.
- Identify training needs of staff under the supervision of the incumbent and arrange for providing suitable training to such staff.
- Updating the information/ data in the CAA web site in relation to the work for which the incumbent is responsible for.
- Maintain proper and updated statistics relating to inspection and surveillance and activities performed by on yearly basis.
- Submit quarterly, bi-annual and annual reports containing the work performed by the holder of the post.
- Providing on the job training to the staff that the CAA may place to understudy the holder of the post
- Conduct performance evaluation of the staff being supervised as required and performed other duties as assigned by the superiors.

1.4.3.3 CIVIL AVIATION INSPECTOR (Aircraft Flight Operations)

a. Main Job Purpose

To perform duties and functions as required by DGCA to ensure that Airlines operated into and out of Sri Lanka and Airlines registered in Sri Lanka wherever they may be are operated in compliance with the requirements stipulated by the Director-General of Civil Aviation.

b. General Information

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation and extreme weather conditions (approximately 50% of the work is out of doors). Incumbent may have to walk for extended periods of time over moderately rough terrain and or on concrete or asphalt.

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c. Nature and Scope of Duties

To support the Director - Aircraft Operations in charge of the Section to inspect, survey and audit standards of Airlines to ensure that the stipulated regulatory and operational requirements published by DGCA are complied. To ascertain the above, the Flight Operations Inspector shall perform the duties and functions, which include, but not limited to the following.

- Maintain a required documents both print and electronic in the Division consisting of registers, books, documents, manuals, ICAO annexes and other material relevant to Operation of Aircraft and update such, if and when relevant. Ensure that the Division's employees make use of the facility to update their knowledge and understanding of the subject for satisfactory performance of their assigned duties.
- Promptly notify the superior(s) about the occasions where local rules or procedures need to be amended to secure compliance with ICAO standards and take necessary follow up measures as instructed by the superior(s) for same.
- Represent Director Aircraft Operations in charge of the Section at forums if and when authorised. In the absence of Senior Operation Inspector perform his duties if and when authorised. Properly use delegated powers on such occasions.
- Help the CAA in the development of draft Regulations, Rules, Implementing Standards or Directives for establishment, operation and maintenance and certification of air operators in Sri Lanka.
- Help the CAA for the development and update of an Air Operator Certification Procedures Manual and Checklists for the guidance of the CAA staff and applicants for Air Operator Certificates in close liaison with the other Sections in the CAA.
- Receiving, Recording, Reviewing and processing in liaison with other concerned Sections in the CAA, formal applications for Air Operator Certificates.
- Support the Director Aircraft Operations in charge of the Section to process applications for issue of Air Operator Certificate for operation of air services in Sri Lanka.
- Support the Director Aircraft Operations in charge of the Section to renew, amend, suspend or cancel Air Operator Certificates as the case may be.
- Conducting surveillance over the Air Operator Certificate holders to ensure continued compliance with the initial certification conditions and requirements which includes but not limited to developing airline audit and inspections.

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- Initial certification of applicants for self-handling or ground handling at airports and continued surveillance of their activities to maintain the required standards and efficiency, in liaison with Aerodromes Section.
- Ensure, maintaining an effective Airline Safety Management System by each air operator.
- Prepare and submit flying and surveillance programmes to the Director (Operations) about 10 days in advance of each month.
- Submit reports about work performed in the previous month by the 10th of the current month.
- Perform all initial certification and continued surveillance on operators holding Air Operators Certificates issued by DGCA, in compliance with the procedures stipulated in the Operations Inspector Handbook.
- Ensure that requirements in the Operations Inspector Handbook in respect of certifications and surveillance of air operators are carried out.
- Identify training needs of staff under the supervision of the incumbent and arrange for providing suitable training to such staff
- Updating the information/data in the CAA website in relation to the work for which the incumbent is responsible for.
- Maintain proper and updated statistics relating to inspections and surveillance activities performed on yearly basis
- Submit quarterly, biannual and annual reports containing the work performed by the holder of the post.
- Providing on-the-job training to the staff that the CAA may place to understudy the holder of the post.
- Conduct Performance Evaluations of the Staff being supervised, as required and perform other duties as assigned by the superior(s).

1.4.3.4 SENIOR CIVIL AVIATION INSPECTOR (Aircraft Cabin Safety)

a. Main Job Purpose:

To ensure that Cabin Safety Standards of commercial operators registered in Sri Lanka satisfy the regularly and operational requirements stipulated by CAASL and that Cabin Crew members employed by and serving airlines have satisfactorily completed an approved course of training and have attained the required level of competency to perform their assigned duties.

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b. General Information:

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods and extreme weather conditions (approximately 50% of the work is out of doors). Incumbents may have to walk for extended periods of time over moderately rough terrain and/or on concrete or asphalt.

c. Nature and Scope of Duties:

On behalf of Director – Aircraft Operations, conduct, inspections, survey and audit Cabin Crew Safety standards of commercial operators, with the objective of ensuring such standards satisfy the regulatory and operational requirements stipulated by ICAO and CAASL. To achieve the said objective the Cabin Safety Inspector shall perform the job functions which include, but not limited to the following.

- Maintain a library in the Division consisting of Books, Documents, Manuals, ICAO annexes and other relevant material, to cabin crew services and safety standards of commercial operators.
- Support Director Aircraft Operations to perform administrative and regulatory functions in the Division, and to organize and manage the Operators Section CAASL to maximize efficiency, effectiveness and productivity of the Division.
- Update and maintain records and statistics pertinent to cabin crew service and safety matters. Methodically maintain logbooks, files, statistic sheets of inspections, surveys and audits carried out, reports written, cabin crew member certificates issued, renewed and cancelled (withdrawn) in the Division to ensure easy and quick access and reference of same.
- Identify training needs for self and Division's employees under your purview (if any) and with authorization from Air Operations make arrangements for relevant training to be received for the purpose of developing and maintaining the knowledge, understanding and skills necessary for satisfactory performance of the assigned duties in the Division.
- Co-ordinate with ICAO, its regional offices and other relevant foreign organizations and operators to share knowledge and understanding pertinent to Cabin
- Crew Service and Safety standards in order to enhance the Cabin Crew Service and Safety standards among commercial operators registered in Sri Lanka.
- Inspect, Survey and audit operators Cabin Safety Instructors and Assessors to ensure the competency and subject Knowledge required with respect and



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satisfy the regulatory, operational and safety of ICAO and CAASL requirements.

- Inspect, survey and audit operators Cabin Crew Training Organizations to ensure the following satisfy the regulatory, operational and safety of ICAO and CAASL requirements.
 - o Training Organizational Structure
 - o Training Instructors, Examiners, Demonstrators on Theoretical, Practical and on the job training
 - o Training Curriculum criteria and objectives of Theoretical, Practical & Objectives
 - o Training Methodology, equipment, aids and facilities
 - o Standards and Objectivity checks, of Test, examinations and (theoretical, practical and OJT)
- Inspect, survey and audit Cabin Crew Theoretical and Practical Safety Training sessions to ensure that each individual Cabin Crew member receives in-depth knowledge, understanding and skills on;
 - o In-flight hazards incidents contingencies from which safety of passengers, crews and aircraft is jeopardized.
 - o Types and number of safety equipment including first aid kits carried on board aircraft, the purpose, locations limitations and use
 - o Precautions to be taken when using safety equipment (before and after use) and procedures to follow
 - o Practical "hands on" training of each type of equipment and or watch practical demonstrations of such equipment.
 - o Handling of unruly passengers
 - o Procedure to follow when decompression occurs in aircraft and awareness of physiological phenomena accompanying loss of pressurization.
 - o Procedures to follow during pilot incapacitation.
- Inspect, survey and audit Cabin Safety Training sessions to ensure that each crew member receives in-depth knowledge understanding and skills to handle, situations of following unlawful interference.
 - o Bomb Threat situations when aircraft is parked, taxing or in-flight.
 - o In-flight search of sabotage devices using Aircraft Security Search checklists and procedures to follow if and when suspect devices are found or not found.

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- o Recommended procedures to follow in Hijack situations.
- Inspect, survey and/or audit, practical training sessions and demonstrations of training Cabin Crew members on;
 - o Land Emergency Evacuation in Forced and Crash Landing situations including use of survival kits carried on board and relevant techniques.
 - o Ditching emergency Evacuation in forced and crash landing situations including use of survival kits carried on board and relevant survival techniques.
 - o Emergency evacuation runway excursion situations
 - o Emergency evacuation for bomb threat situations
- Inspect and monitor Cabin Crew Member training programs to ensure that each cabin crew member gains comprehensive awareness, knowledge and understanding of
 - o Types of dangerous goods which may and not be carried in a passenger cabin and has completed the dangerous goods training programs required by annex 18.
 - o Human performance as related to passenger cabin safety duties including flight crew member co-ordination.
 - o Other crew members' assignments and functions in the event of an emergency so far as its necessary for fulfilment for cabin crew members own duties.
- Carry out in flight observations instructions surveys and audits on a periodic basis to ensure that operations cabin services are safely oriented and satisfy the following requirements.
 - o The stipulated minimum No. of safety and emergency and survival equipment are available on board at appropriate places.
 - o All safety and emergency and survival equipment carried on board are serviceable and in a ready to be used condition.
 - o The identification tags for each safety and emergency equipment are placed in appropriate position for ease and correct identification of the item and for the crew to gain easy access to each item.
 - o If and when practicable and time permitting ensure by questioning the members of the cabin crew their knowledge and understanding on the concept of cabin safety are adequate and to a level acceptable and stipulated by CAASL to serve as a member of the cabin crew. Also check their awareness and knowledge on latest instructions,

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notices and recommendations,(if any) issued by CAASL for betterment of cabin safety.

- o Check cabin crewmember credentials and validity of cabin crewmember certificate issued by CAASL to ensure competency of all cabin crewmember serving the particular flight.
 - o Check, to ensure that all cabin crewmembers serving the particular flight are within the stipulated flight and duty time limitations pertinent to cabin crew.
- Inspect survey and/or audit cabin crewmember rostering system and past and current cabin crew rosters to ensure that operators rostering system conforms to CAASL approved Duty and flight time limitations.
- Review reports, records and statistics maintained by operators with regard to cabin safety incidents and also review action taken and the systems developed and adopted by them to identify the hazards and to minimize and eradicate the hazards to enhance cabin safety.
- Peruse occurrence reports pertinent to cabin safety of operators received at Operations Division of CAASL, and issue recommendations and instructions on operations to operators with the objective of eradicating hazards and minimizing incidents. Maintain records of such reports received, and recommendations and instructions issued to operators.
- Review cabin crew safety standards of commercial operators in Sri Lanka for the purpose of developing and standardizing regulations and for enhancement of cabin safety standards and the required level of knowledge, understanding and skills of the individual cabin crew member for satisfactory safety oriented performance of cabin services
- Organize and conduct 'Safety Meetings' with Management of Cabin Crew Services periodically to discuss Cabin Safety Programs and strategies to develop safety culture in the organization for the purpose of enhancing Cabin Safety.
- Review incident accident reporting system pertinent to Cabin Safety adopted by operators to ensure the system functions in conformity with requirements stipulated by CAASL. Encourage and advice operators to introduce a Non-punitive. Guarantee for voluntary reporting of incidents & accidents.
- Process applications made by operators to the request for Cabin Crew Member Certificate.
- Ascertain the applicants concerned have satisfied the stipulated cabin safety requirements and are eligible to obtain cabin crewmember certificate issued by CAASL. Liaise with Personnel Licensing Division of CAASL and recommend issuance and renewals of Cabin Crew Member Certificates.

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- Review/ peruse Cabin Crew Services Manuals and Cabin Safety Manuals, including Training Curriculums submitted by operators to CAASL for the purpose obtaining approval, and approve same if they satisfy standards stipulated by CAASL and are in conformity with regulatory and operational requirements accepted by CAASL.
- Act in an advisory capacity to AD Operations and DGCASL on matters concerning Cabin Safety of Commercial operators.
- Perform any other duty assigned by DGCA and/or Director Operations and related duties of above.

1.4.3.5 CIVIL AVIATION INSPECTOR (Aircraft Cabin Safety)

a. Main Job Purpose:

To ensure that Cabin Safety Standards of commercial operators registered in Sri Lanka satisfy the regularly and operational requirements stipulated by CAASL and that Cabin Crew members employed by and serving airlines have satisfactorily completed an approved course of training and have attained the required level of competency to perform their assigned duties.

b. General Information:

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods and extreme weather conditions (approximately 50% of the work is out of doors). Incumbents may have to walk for extended periods of time over moderately rough terrain and/or on concrete or asphalt.

c. Nature and Scope of Duties:

On behalf of Director – Aircraft Operations, conduct, inspections, survey and audit Cabin Crew Safety standards of commercial operators, with the objective of ensuring such standards satisfy the regulatory and operational requirements stipulated by ICAO and CAASL. To achieve the said objective the Cabin Safety Inspector shall perform the job functions which include, but not limited to the following.

- Maintain a library in the Division consisting of Books, Documents, Manuals, ICAO annexes and other relevant material, to cabin crew services and safety standards of commercial operators.
- Support Director Aircraft Operations to perform administrative and regulatory functions in the Division, and to organize and manage the Operators Section CAASL to maximize efficiency, effectiveness and productivity of the Division.

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- Update and maintain records and statistics pertinent to cabin crew service and safety matters. Methodically maintain logbooks, files, statistic sheets of inspections, surveys and audits carried out, reports written, cabin crew member certificates issued, renewed and cancelled (withdrawn) in the Division to ensure easy and quick access and reference of same.
- Identify training needs for self and Division's employees under your purview (if any) and with authorization from Air Operations make arrangements for relevant training to be received for the purpose of developing and maintaining the knowledge, understanding and skills necessary for satisfactory performance of the assigned duties in the Division.
- Co-ordinate with ICAO, its regional offices and other relevant foreign organizations and operators to share knowledge and understanding pertinent to Cabin
- Crew Service and Safety standards in order to enhance the Cabin Crew Service and Safety standards among commercial operators registered in Sri Lanka.
- Inspect, Survey and audit operators Cabin Safety Instructors and Assessors to ensure the competency and subject Knowledge required with respect and satisfy the regulatory, operational and safety of ICAO and CAASL requirements.
- Inspect, survey and audit operators Cabin Crew Training Organizations to ensure the following satisfy the regulatory, operational and safety of ICAO and CAASL requirements.
 - o Training Organizational Structure
 - o Training Instructors, Examiners, Demonstrators on Theoretical, Practical and on the job training
 - o Training Curriculum criteria and objectives of Theoretical, Practical & Objectives
 - o Training Methodology, equipment, aids and facilities
 - o Standards and Objectivity checks, of Test, examinations and (theoretical, practical and OJT)
- Inspect, survey and audit Cabin Crew Theoretical and Practical Safety Training sessions to ensure that each individual Cabin Crew member receives in-depth knowledge, understanding and skills on;
 - o In-flight hazards incidents contingencies from which safety of passengers, crews and aircraft is jeopardized.
 - o Types and number of safety equipment including first aid kits carried on board aircraft, the purpose, locations limitations and use
 - o Precautions to be taken when using safety equipment (before and after use) and procedures to follow

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- o Practical "hands on" training of each type of equipment and or watch practical demonstrations of such equipment.
 - o Handling of unruly passengers
 - o Procedure to follow when decompression occurs in aircraft and awareness of physiological phenomena accompanying loss of pressurization.
 - o Procedures to follow during pilot incapacitation.
- Inspect, survey and audit Cabin Safety Training sessions to ensure that each crew member receives in-depth knowledge understanding and skills to handle, situations of following unlawful interference.
 - o Bomb Threat situations when aircraft is parked, taxing or in-flight.
 - o In-flight search of sabotage devices using Aircraft Security Search checklists and procedures to follow if and when suspect devices are found or not found.
 - o Recommended procedures to follow in Hijack situations.
- Inspect, survey and/or audit, practical training sessions and demonstrations of training Cabin Crew members on;
 - o Land Emergency Evacuation in Forced and Crash Landing situations including use of survival kits carried on board and relevant techniques.
 - o Ditching emergency Evacuation in forced and crash landing situations including use of survival kits carried on board and relevant survival techniques.
 - o Emergency evacuation runway excursion situations
 - o Emergency evacuation for bomb threat situations
- Inspect and monitor Cabin Crew Member training programs to ensure that each cabin crew member gains comprehensive awareness, knowledge and understanding of
 - o Types of dangerous goods which may and not be carried in a passenger cabin and has completed the dangerous goods training programs required by annex 18.
 - o Human performance as related to passenger cabin safety duties including flight crew member co-ordination.
 - o Other crew members' assignments and functions in the event of an emergency so far as its necessary for fulfilment for cabin crew members own duties.

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- Carry out in flight observations instructions surveys and audits on a periodic basis to ensure that operations cabin services are safely oriented and satisfy the following requirements.
 - o The stipulated minimum No. of safety and emergency and survival equipment are available on board at appropriate places.
 - o All safety and emergency and survival equipment carried on board are serviceable and in a ready to be used condition.
 - o The identification tags for each safety and emergency equipment are placed in appropriate position for ease and correct identification of the item and for the crew to gain easy access to each item.
 - o If and when practicable and time permitting ensure by questioning the members of the cabin crew their knowledge and understanding on the concept of cabin safety are adequate and to a level acceptable and stipulated by CAASL to serve as a member of the cabin crew. Also check their awareness and knowledge on latest instructions, notices and recommendations,(if any) issued by CAASL for betterment of cabin safety.
 - o Check cabin crewmember credentials and validity of cabin crewmember certificate issued by CAASL to ensure competency of all cabin crewmember serving the particular flight.
 - o Check, to ensure that all cabin crewmembers serving the particular flight are within the stipulated flight and duty time limitations pertinent to cabin crew.
- Inspect survey and/or audit cabin crewmember rostering system and past and current cabin crew rosters to ensure that operators rostering system conforms to CAASL approved Duty and flight time limitations.
- Review reports, records and statistics maintained by operators with regard to cabin safety incidents and also review action taken and the systems developed and adopted by them to identify the hazards and to minimize and eradicate the hazards to enhance cabin safety.
- Peruse occurrence reports pertinent to cabin safety of operators received at Operations Division of CAASL, and issue recommendations and instructions on operations to operators with the objective of eradicating hazards and minimizing incidents. Maintain records of such reports received, and recommendations and instructions issued to operators.
- Review cabin crew safety standards of commercial operators in Sri Lanka for the purpose of developing and standardizing regulations and for enhancement of cabin safety standards and the required level of knowledge, understanding

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and skills of the individual cabin crew member for satisfactory safety oriented performance of cabin services

- Organize and conduct 'Safety Meetings' with Management of Cabin Crew Services periodically to discuss Cabin Safety Programs and strategies to develop safety culture in the organization for the purpose of enhancing Cabin Safety.
- Review incident accident reporting system pertinent to Cabin Safety adopted by operators to ensure the system functions in conformity with requirements stipulated by CAASL. Encourage and advice operators to introduce a Non-punitive. Guarantee for voluntary reporting of incidents & accidents.
- Process applications made by operators to the request for Cabin Crew Member Certificate.
- Ascertain the applicants concerned have satisfied the stipulated cabin safety requirements and are eligible to obtain cabin crewmember certificate issued by CAASL. Liaise with Personnel Licensing Division of CAASL and recommend issuance and renewals of Cabin Crew Member Certificates.
- Review/ peruse Cabin Crew Services Manuals and Cabin Safety Manuals, including Training Curriculums submitted by operators to CAASL for the purpose obtaining approval, and approve same if they satisfy standards stipulated by CAASL and are in conformity with regulatory and operational requirements accepted by CAASL.
- Act in an advisory capacity to AD Operations and DGCASL on matters concerning Cabin Safety of Commercial operators.
- Perform any other duty assigned by DGCA and/or Director Operations and related duties of above.

1.4.3.6 SENIOR CIVIL AVIATION INSPECTOR (Aircraft Ground Operations)

a. Main Job Purpose:

To support the DGCA to carry out his/her job functions pertinent to certifications, inspections, monitoring, surveillance and auditing of aircraft operators and prospective applicants for aircraft operations to ensure that all legal and safety requirements for operation of flights including the practices and procedures relevant to maintenance of flight crew proficiency are complied with.

b. General Information

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods and extreme weather conditions (approximately 50% of the work is

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out of doors). Incumbents may have to walk for extended periods of time over moderately rough terrain and/or on concrete or asphalt.

c. Nature and Scope of Duties

Support the Operations Inspector Aircraft Operations to perform duties and tasks relevant to certification, inspections, monitoring, surveillance and auditing of job functions performed by organizations/units/individuals with regard to operation of flights excluding that performed by flight crews during flight time, which includes but not limited to the following.

- To inspect/monitor the theoretical and practical training programmes of all operational personnel (except flight crews aircraft type courses) concerning initial, recurrent, reactivation, revision and refreshes training to ensure the organizations /units/ individuals responsible for provision of such training adhere to the DGCA approved training syllabuses and conduct training in conformity with the standards stipulated by DGCA for flight crews to be recognized as competent to carry out their job functions pertinent to flight operations.
- Dangerous Goods Regulations
- Aviation Security
- Crew Resource Management
- Safety and Emergency Procedures
- Company Indoctrination
- Air Law
- Assist the Director Aircraft Operations in the conduct of initial certification of continuing surveillance of aircraft operators throughout the established certification process.
- Conduct of Operator's Station Facility Inspections.
- Review of operator's training programmes and granting of approval.
- Conduct of Ramp inspection of aircraft in Sri Lanka to ensure their compliance with the approved regulations and procedures.
- Assist the Director Aircraft Operations to update CAA Manuals and Handbooks on operations matters.
- Inspect the Mandatory Occurrence Reporting (MOR) Systems adopted by operators, to ascertain that operators satisfy DGCA requirements for occurrence reporting.
- Inspect flight crew rosters of Domestic and International Operators to ensure the rostering of crews is carried out in accordance with DGCA approved Flight and Duty Period (FOP) requirements. Carry out random inspections on aircraft voyage reports to ensure the operators (crews) have not deviated from stipulated FOP requirements.
- Inspect the Aircraft Emergency Response plans and procedures adopted by operators to mitigate the effects of aircraft accidents/incidents. Observe practice emergency exercises when conducted by operators to measure the effectiveness of such plans.
- Inspect plans practices and procedures adopted by operators for flight crews to respond to unlawful interference to ensure they are effective, and meet DGCA stipulated standards.

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- Prepare checklists, survey and audit forms relevant to Operations inspection of operators are carried out by DGCA Operations Inspectors for reference purposes. (Manual or electronics data base)
- Inspect certification applicants for handling and/or transport of dangerous goods by air within, into, out of or over Sri Lanka and conduct frequent surveillance to ensure their compliance with the DGCA requirements.
- Ensure that all CAASL Manual and publications relating to Flight Operations are kept updated with all amendments.
- Providing on the job training to the staff that the CAA
- May place to understudy the holder of the post.
- Conduct Performance Evaluations of the officers being supervised, as required by the CAA.
- Develop and update Office Procedures being performed or to be performed by the incumbent.
- Maintain an updated record of statistics pertaining to all operational inspections and findings on yearly basis.
- Updating the information/data in the CAA website in respect of the subject matter that comes under the purview of the holder of the post.
- Preparing quarterly, bi-annual or annual reports containing the progress made in respect of the work performed by the officer.
- Perform any other duty or function that may be assigned by the superiors.

1.4.3.7 CIVIL AVIATION INSPECTOR (Aircraft Ground Operations)

a. Main Job Purpose

To assist the Ground Operations Inspector to carry out his/her job functions pertinent to certifications, inspections, monitoring, surveillance and auditing of aircraft operators and prospective applicants for aircraft operations to ensure that all legal and safety requirements for operation of flights including the practices and procedures relevant to maintenance of flight crew proficiency are complied with.

b. General Information

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods and extreme weather conditions (approximately 50% of the work is out of doors). Incumbents may have to walk for extended periods of time over moderately rough terrain and/or on concrete or asphalt.

c. Nature and Scope of Duties

Assist the Ground Operations Inspector to perform duties and tasks relevant to certification, inspections, monitoring, surveillance and auditing of job functions performed by organizations/units/individuals with regard to operation of flight excluding that performed by flight crews during flight time, which includes but not limited to the following.

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- To inspect/monitor the theoretical and practical training programmes of all operational personnel (except flight crews aircraft type courses) concerning initial, recurrent, reactivation, revision and refreshes training to ensure the organizations /units/ individuals responsible for provision of such training adhere to the DGCA approved training syllabuses and conduct training in conformity with the standards stipulated by DGCA for flight crews to be recognized as competent to carry out their job functions pertinent to flight operations.
 - a) Dangerous Goods Regulations
 - b) Aviation Security
 - c) Crew Resource Management
 - d) Safety and Emergency Procedures
 - e) Company Indoctrination
 - f) Air Law
 - g) ETOPS competency
 - h) Cross Crew Qualification
 - i) Mixed Fleet Flying
 - j) Aircraft/Airport competency
- Inspect training files of all operational staff to ensure the training records are methodically and accurately maintained so that their training requirements can be identified correctly.
- Inspect and monitor the theoretical and practical training programs of Flight Operations Officers (Flight Dispatches) with regard to their initial and recurrent training to ensure that they comply with DGCA requirements.
- Inspect relevant documents manuals and other printed material, which are required for the on-board libraries of all aircraft of all fleets are kept updated by operators. Inspect system of updating of on-board library items.
- Inspect the relevant documents, manuals and other publications required for flight operations purpose are updated and maintained by the operators.
- Inspect the Mandatory Occurrence Reporting (MOR) Systems adopted by operators, to ascertain that operators satisfy DGCA requirements for occurrence reporting.
- Inspect operator's fuel policies approved by DGCA and check aircraft fuel sheet and other fuel uplift records and statistics maintained by operators to ensure that operators have complied with policy requirements.
- To ensure such practices and procedures are carried out in conformity with stipulated DGCA requirements. Inspection of operational functions performed at flight Control Centres facilities, and equipment used includes, but not limited to the following.
 - a) Collection of data from relevant sources to prepare for pre-flight briefing (request for computerized flight plans if relevant)
 - b) Actual pre-flight briefing of crew by flight dispatch
 - c) Flight Monitoring
 - d) Crew Scheduling
 - e) Accuracy and reliability of equipment used to facilitate an efficient flight control service

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- Collection of data from relevant sources to prepare for pre-flight briefing (request for computerized flight plans if relevant)
 - a) Actual pre-flight briefing of crew by flight dispatchers
 - b) Flight Monitoring
 - c) Crew Scheduling
 - d) Accuracy and reliability of equipment used to facilitate an efficient flight control service.
- Inspect the Aircraft Emergency Response plans and procedures adopted by operators to mitigate the effects of aircraft accidents/incidents. Observe practice emergency exercises when conducted by operators to measure the effectiveness of such plans.
- Inspect plans practices and procedures adopted by operators for flight crews to respond to unlawful interference to ensure they are effective, and meet DGCA stipulated standards.
- Prepare checklists, survey and audit forms relevant to Operations inspection of operators are carried out by DGCA Operations Inspectors for reference purposes. (Manual or electronics data base)
- Inspect for initial certification applicants for all matters involved with handling and/or transport of dangerous goods by air within, into, out of or over Sri Lanka and conduct frequent surveillance to ensure their compliance with the DGCA requirements.
- Ensure that all CAASL Manuals and publications relating to Flight Operations are kept updated with all amendments.
- Inspect flight Operations activities in general, excluding functions performed by pilots during flight time to ensure that operators comply with stipulated DGCA regulatory requirements and to ensure that flight operations organizations I departments I sections I units perform their functions in a methodical manner for flight operations to be efficient and safe.
- Providing on the job training to the staff that the CAA
- May place to understudy the holder of the post.
- Prepare and update office procedures in respect of each task being performed or to be performed by the incumbent.
- Maintain an updated record of statistics pertaining to all operational inspections and findings on yearly basis.
- Perform any other duty or function that may be assigned by the superiors.

1.4.3.8

DESIGNATED FLIGHT OPERATIONS INSPECTOR

a. Main Job Purpose

To perform duties and functions as required by DGCA to ensure that Airlines operated into and out of Sri Lanka and Airlines registered in Sri Lanka wherever they may be are operated in compliance with the requirements stipulated by the Director-General of Civil Aviation.

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b. General Information

This position requires local and overseas travel at short notice with extended overnight stay and irregular working schedules, as the situation demands. Travel may be in aircraft or by ground transportation over rough roads. An incumbent may be exposed to aircraft noise, moving machinery, dust, high voltage electricity, dangerous goods, electromagnetic radiation and extreme weather conditions (approximately 50% of the work is out of doors). Incumbent may have to walk for extended periods of time over moderately rough terrain and or on concrete or asphalt.

c. Nature and Scope of Duties

To support the Director - Aircraft Operations in charge of the Section to inspect, survey and audit standards of Airlines to ensure that the stipulated regulatory and operational requirements published by DGCA are complied. To ascertain the above, the Designated Flight Operations Inspector shall perform the duties and functions, which include, but not limited to the following.

- Promptly notify the superior(s) about the occasions where local rules or procedures need to be amended to secure compliance with ICAO standards and take necessary follow up measures as instructed by the superior(s) for same.
- Represent Director Aircraft Operations in charge of the Section at forums if and when authorised.
- Help the CAA for the development and update of an Air Operator Certification Procedures Manual and Checklists for the guidance of the CAA staff and applicants for Air Operator Certificates in close liaison with the other Sections in the CAA.
- Conducting surveillance over the Air Operator Certificate holders to ensure continued compliance with the initial certification conditions and requirements which includes but not limited to developing airline audit and inspections.
- Initial certification of applicants for self-handling or ground handling at airports and continued surveillance of their activities to maintain the required standards and efficiency, in liaison with Aerodromes Section.
- Ensure, maintaining an effective Airline Safety Management System by each air operator.
- Submit reports about work performed in the previous month by the 10th of the current month.
- Perform continued surveillance on operators holding Air Operators Certificates issued by DGCA, in compliance with the procedures stipulated in the Operations Inspector Handbook.

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- Ensure that requirements in the Operations Inspector Handbook in respect of certifications and surveillance of air operators are carried out.
- Providing on-the-job training to the staff that the CAA may place to understudy the holder of the post.

1.4.4 GENERAL

1.4.4.1 DUTIES OF THE CIVIL AVIATION INSPECTORS OF THE OPERATIONS DIVISION

The duties and responsibilities of the CAA Inspectors are laid down in the Operations Inspector Hand Book Volume 2 Section 1, 2 and are divided in to initial certification of air operators, air operator administration and surveillance of certificated operators. These inspections cover both ground and in-flight inspections. The in-flight inspections cover checks from the observer seats as laid down in the Hand Book.

1.4.4.2 CAA INSPECTORS IN OPERATIONS DIVISION ARE TO ENSURE THAT:

- a. Proper analytical reports are submitted promptly to the Director Aircraft Operations on their inspections.
- b. Flying and surveillance programmes are submitted about 10 days in advance of each month.
- c. Monthly reports are submitted by the 10th of each month.
- d. For important occurrences requiring immediate action, a report is submitted immediately.
- e. Reports on initial flight trials, such as proving or inaugural flights of operators and comments on Weather Minima are given promptly.
- f. Tasks assigned by other divisions are responded to promptly. Reports may be submitted through the Director (Operations) Divisions
- g. All orders/notices. Circulars issued by the Director Aircraft Operations are adhered to and responded to promptly where necessary.
- h. Use their initiative to pursue any matter that needs to be attended to by the DGCA in the interest of air safety, morale and efficiency of the system.
- i. Ensure that the confidentiality of matters dealing with the reputation of individuals is always maintained.
- j. Maintain a constant dialogue with operators and officials in the aviation industry on professional matters in order to keep up to date with latest developments.

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1.5 STANDARD TERMS FOR ACTION INSPECTOR ENTRY

1.5.1 The purpose of this section is to discuss the general policies that determine the types of GID entries that will be made by technical inspectors.

1.5.2 The guidance in this chapter applies to all selections of Action numbers.

1.5.3 STANDARDIZED USE OF TERMS

1.5.3.1 The following terms and their application are defined in this section and should be applied to all inspector activities—

1.5.3.1.1 Conformance

1.5.3.1.2 Evaluation

1.5.3.1.3 Inspection

1.5.3.1.4 Investigation

1.5.3.1.5 Certification

1.5.3.1.6 Safety Issue

1.5.4 AUDIT FOR CONFORMANCE.

Conformance is defined as “an action taken by an inspector that COMPARES the manual, procedures, programme, system, aircraft or an individual’s performance TO THE ESTABLISHED STANDARD.”

1.5.4.1.1 Conformance Example 1: Comparing a pilot’s performance for conformance to the minimum established standards for the issuance of the licence.

1.5.4.1.2 Conformance Example 2: Comparing the contents of the aircraft technical log for conformance with the ANR mandated minimum contents for such a log.

1.5.4.1.3 Conformance Example 3: Comparing the contents of an aircraft Minimum Equipment List for conformance with the minimum required contents of the Minimum Equipment List.

1.3.4.1.4 Conformance Example 4: Comparing the contents of the aircraft maintenance programme (schedule) for conformance with the manufacturer’s MRB document.

1.5.4.1.5 Conformance Example 5: Walking across the ramp where servicing, fuelling and loading activities are occurring and mentally comparing for conformance with the published standards.

1.5.4.1.6 Conformance Example 6: Seeing maintenance being performed on the ramp and stopping to compare the work methodology for conformance with the published standards.

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1.5.4.1.7 Conformance Example 7: Listening to conversations at a party about someone's flying exploits and mentally comparing them for conformance to the published regulations.

1.5.5 PRIMARY INSPECTOR AUDITING CATEGORIES

1.5.5.1 There are 3 primary categories that can be used to describe the auditing functions performed by an inspector:

- 1.5.5.1.1 Evaluations;
- 1.5.5.1.2 Inspections; and
- 1.5.5.1.3 Investigations

1.5.5.2 The GID is set up to record the results and technical decision of the inspector depending on the audit category. (Subsequent examples will illustrate this function.)

1.5.6 EVALUATIONS

1.5.6.1 The term, evaluation, is used to describe an inspector action taken before the document, procedure, system, aircraft or airmen are approved for use in aviation operations.

1.5.6.1.1 Evaluation Example 1: Auditing a proposed aircraft operating checklist before approving it for use by an air carrier for the conduct of flight operations.

1.5.6.1.2 Evaluation Example 2: Auditing a proposed maintenance programme (schedule) before approving it as the air carrier timetable for completing maintenance checks.

1.5.6.1.3 Evaluation Example 3: Auditing a proposed aircraft operations manual before authorizing it for use by the air carrier's flight crew members.

1.5.6.1.4 Evaluation Example 4: Auditing the performance of a pilot during a flight check before issuance of the licence or rating.

1.5.6.1.5 Evaluation Example 5: Auditing the aircraft to determine that it meets the minimum requirements for flight operations in the category of the airworthiness certificate to be issued.

1.5.7 INSPECTIONS

1.5.7.1 The term, inspection, is used to describe a specific inspector action when evaluating a document, record, procedure, individual or system that is currently approved for use in aviation.

1.5.7.1.1 Inspection Example 1: Auditing an aircraft operating checklist currently being used by an air carrier for the conduct of flight operations.

1.5.7.1.2 Inspection Example 2: Auditing a maintenance programme (schedule) currently being used by an air carrier for maintaining an aircraft.

1.5.7.1.3 Inspection Example 3: Auditing an aircraft operations manual currently being used by the air carrier's flight crew members.

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1.5.7.1.4 Inspection Example 4: Auditing the performance of a licensed pilot during a re-examination flight check after an accident.

1.5.7.1.5 Inspection Example 5: Auditing the aircraft after a flight operation to determine if it met the minimum requirements for flight operations for that flight operation.

1.5.7.1.6 Inspection Example 6: Auditing the crew's performance on a revenue flight to determine that they are conforming to the air carrier's procedures.

1.5.8 INVESTIGATIONS

1.5.8.1 The term, investigation, is used to describe the overall process of inspector actions when following up on a reported complaint, incident, and accident or enforcement case.

1.5.8.2 Depending on its complexity, an investigation may include both evaluations and inspections.

1.5.8.3 An investigation usually involves a series of activities conducted over a period of time.

1.5.9 CERTIFICATION

1.5.9.1 The term, certification, is used to describe the overall process of inspector actions to approve, licence, or certificate an individual, document, procedure, record or organization.

1.5.9.2 Depending on its complexity, a certification may include both evaluations and inspections.

1.5.9.2.1 For example, a certification for an original air operator certificate will include a complex series of evaluations to approve the documentation and other arrangements, followed by a battery of inspections before the AOC holder is approved for operations in aviation.

1.5.9.2.2 But the "certification" actions associated with a single revision of a Minimum Equipment List will probably consist only of evaluations conducted by each of the inspector technical specialties prior to approval for use in aviation.

1.5.9.3 A certification usually involves a series of activities conducted over a period of time.

1.5.10 SAFETY ISSUE

1.5.10.1 The term, safety issue, is used to describe a finding or observation made by an inspector as a result of almost any activity (except "evaluation"). Safety issues can result from inspections, investigations, and other contact with the aviation public.

1.5.10.2 But safety issues are not generally associated with evaluations or certifications accomplished by the technical inspector.

1.5.10.3 Examples of safety issues primarily focus on the technical inspector's assessment that an individual or organization has failed, either inadvertently or by decision, to—

1.5.10.3.1 Conform to aviation law, regulations and directives issued by Sri Lanka;

1.5.10.3.2 Conform to relevant industry safety practices; or

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1.5.10.3.3 Maintain the required fitness to hold a certificate or licence.

1.5.10.4 The CAASL-FS will then pursue resolution of those identified safety issues. The priority of that resolution process will be directly associated with the assessed impact to public safety.

1.6 AUDITING STANDARDS

1.6.1 The concept of auditing is based on the establishment of specific standards as the basis for making an objective evaluation.

1.6.1.1 The primary standards that will be applied are the current aviation regulations, mandatory technical guidance and other relevant industry-wide and regional safety standards.

1.6.1.2 These regulations and other relevant standards are derived from the ICAO Convention, ICAO Annexes and regional agreements.

1.6.1.3 As a signatory State, Sri Lanka has agreed by treaty that those minimum safety standards will be required.

1.6.2 To implement this, Sri Lanka has published or adopted regulations and guidance that is applicable to the aviation community.

1.6.2.1 The aircraft manufacturers' also publish relevant technical standards and practices in the development of the type certification and maintenance documents during the original certification of the aircraft.

1.6.2.2 In addition, there are regional documents published by organizations outlining the safety standards to be applied during flight in those regions.

1.6.2.3 These constitute the standards that will be audited by the inspectors on behalf of the CAASL-FS.

1.6.3 APPLICABLE AUDITING STANDARDS

1.6.3.1 The required credibility of a safety inspector's audit findings is directly related to the basis for making such a finding.

1.6.3.1.1 Inspectors should avoid expressing personal opinions to members of the aviation community.

1.6.3.1.2 This is especially true when the inspector is not sure of the proper answer.

1.6.3.2 The basis for making a decision, which will require resolution action by a member of the aviation community, should be, limited to law, regulations, mandatory technical guidance, and relevant safety practices.

1.6.3.3 This is applicable to all certification evaluations and later inspections and surveillance. The following sources may be used as a basis for evaluation decisions and discussions—

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- 1.6.3.3.1 Law. For inspector auditing purposes, applicable Sri Lanka law may be used and includes treaties and other regional agreements to which Sri Lanka is a Signatory State. The specific law and applicable section should be cited when issuing a written evaluation decision.
- 1.6.3.3.2 Safety Regulations. For inspector auditing purposes, applicable Sri Lanka regulations may be used. The specific regulation and applicable section/subsection should be cited when issuing a written evaluation decision.
- 1.6.3.3.3 Mandatory Technical Information. For inspector auditing purposes, technical information published by the CAASL-FS, FAA, aircraft manufacturer or ICAO State of Design may be used. The specific source and applicable page/paragraph should be cited when issuing a written evaluation decision.
- 1.6.3.3.4 Relevant Safety Practices. For inspector auditing purposes, relevant safety practices that are published by the CAASL-FS, FAA, EASA, ICAO and aircraft manufacturer may be used. The specific source and applicable page/paragraph should be cited when issuing a written evaluation decision.

1.6.3.4 INFORMAL DISCUSSIONS

- 1.6.3.4.1 The previous guidance is also applicable to informal discussions from the standpoint that inspectors should confine their evaluation discussions and decisions to known actual requirements.
- 1.6.3.4.2 Inspectors are not expected to memorize the exact source locations of regulatory requirements.
- 1.6.3.4.3 It is possible that an inspector may make a mistake as to a specific requirement or source document in an informal discussion. If this does happen, the inspector now has an obligation to provide the person with the correct information.

1.6.3.5 INSPECTOR RECOMMENDATIONS

- 1.6.3.5.1 It is true that an inspector that has creditability with the aviation community can make recommendations that are readily accepted.
- But the acceptability of an individual inspector's recommendations should not be the basis for any evaluation decision.
 - If the inspector believes that a specific safety requirement should be published by the CAASL, that individual should submit his or her recommendation, including the proposed terminology, to the CAASL-FS Director for consideration.
- 1.6.3.5.2 Inspector recommendations should be based on the applicable published auditing standards.
- The inspector is cautioned to refrain from making recommendations based solely on personal opinion or past experience.

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- The members of the aviation community will not be expected to make changes to their practices based on inspector personal opinions.

1.7 AUDITING ROLE IS PRIMARY ROLE

1.7.1 The auditor role is the foundation for all other inspector activities. The most valuable service that the inspector provides is an auditor's perspective on the aviation community's conformance with the applicable regulations and standards that are the CAASL's safety responsibilities.

1.7.2 A CAASL-FS inspector is expected to be in a continuous mode of an "auditor" on behalf of these safety responsibilities.

1.7.3 This is obviously the case when the inspector is engaged in job tasks such as observing training, conducting inspections of facilities, records or aviation personnel, or reviewing manuals or other documents for certification.

1.7.4 THE AUDITOR IS FACT-FINDER

1.7.4.1 As auditors, CAASL-FS inspectors should be continuously comparing the actual manuals, systems, procedures, personnel performance and events to the aviation laws, regulations and technical standards.

1.7.4.2 Auditors are "fact-finders." They gather and record facts regarding the systems, procedures and personnel they audit – for later action.

- a. In most situations, the CAASL-FS inspectors are not expected to take immediate action.
- b. They are to record the facts and provide them to CAASL management, with recommendations for necessary resolution.

1.7.4.3 As fact-finders, the CAASL-FS inspectors are expected to conduct themselves in a low-key, but fully authorized, manner.

1.7.4.4 It is not necessary to spend any time explaining, justifying or arguing points with the aviation community.

- a. The primary job is evaluating the facts as compared to the legislative reference standards.
- b. Then making a record of the auditing events: observations, inspections, evaluations, approvals, disapprovals, safety issue findings and resolution of those safety issues.

1.7.5 AUDITING ROLE APPLICABLE AT ALL TIMES

1.7.5.1 What is not quite as obvious is that this auditor role applies at any time that the inspector is associated with or comes into contact with the aviation community, whether travelling on holiday or even in personal associations or encounters with personnel from the aviation community.

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1.7.5.2 That is why there is the concern regarding “conflict of interest,” with the emphasis that the inspector (auditor) should avoid compromising his or her ability to objectively perform the assigned inspecting (auditing) function on behalf of the CAASL and the travelling public.

- a. The inspector should avoid situations and relationships, both on and off duty, which may compromise his objectivity in CAASL-FS auditing situations.
- b. Gifts, meals or favours from the aviation community should not be accepted. Unofficial “meetings” away from work without another CAASL-FS inspector present are highly suspect, and should be avoided.
- c. The inspector should notify his supervisor when such an event occurs on an unplanned basis.
- d. The CAASL-FS inspector should not participate in inspections, evaluations and investigations involving their social friends.
- e. It is the inspector’s duty to advise his supervisor in writing of the relationship and request to be excused from the particular event(s).

1.7.6 PARTY TO NON-CONFORMANCE

1.7.6.1 This is not to infer that the CAASL-FS inspector is to say nothing when they observe non-conformance with the legislation standards.

- a. It is a requirement that, as soon as an inspector recognizes that an aviation operator or its personnel are about to get into a situation that may result in non-conformance with the standards, the inspector must tell the individuals that they may be in a non-conformance situation – paraphrasing the applicable legislation.
- b. If this is not done, the inspector has become “party” to the non-conformance.

1.7.6.2 Failure to provide this inspector input complicates, or even invalidates subsequent resolution of the safety issues.

- a. It is not acceptable for an inspector to knowingly fail to advise the operator or its individuals when it appears that non-conformance is about to occur or is occurring.
- b. On the other hand, the inspector as an auditor has then accomplished his duty. The inspector should not allow himself to be drawn into further explanations or argumentative situations.
- c. Should the operator or individuals continue in the non-conformance situation, it is not necessary for the inspector to re-emphasize the point.

1.7.7 IMMEDIATE SAFETY OF FLIGHT ISSUES

1.7.7.1 The only time the inspector has an obligation to insist on corrective action is in a situation involving immediate safety of flight.

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1.8 OFFICIAL RECORDS

- 1.8.1 The General Inspection Database file is the “official” record that an inspector accomplished a function and the results of those functions.
- 1.8.2 The General Inspection Database -Safety Issue file is the “official” record of resolution of a safety issue.
- 1.8.3 “Official” records of approval or acceptance by the CAASL-FS are—
- Hard copy of a Letter of Approval
 - Hard copy of a Letter of Authorization
 - Hard copy of Operations Specifications

1.9 INSPECTOR CHECKLISTS

1.9.1 USE OF CHECKLISTS

1.9.1.1 Checklists are provided in this manual for the purpose of training and standardization.

1.9.1.2 These checklists may be used by inspectors—

- For the systematic accomplishment of evaluation or inspection of a process, procedure or programme;
- To convey the extent of their evaluation or inspection to a certification or inspection project coordinator who is responsibility for the larger project;
- May be retained as an item of proof to an investigation report; and
- As a part of an inspector’s informal report to management for the completion of a certification project.

1.9.1.3 These checklists may be used by supervisors to—

- Evaluate the completeness of the an inspector’s evaluation or inspection; and
- May be retained as a supervisor’s item of proof for a personnel performance record.

1.9.2 NOT THE OFFICIAL RECORD

1.9.2.1 But these checklists, whether partially or completed, are to be retained as official records of evaluations and inspections that have been conducted.

- Each CAASL employee is responsible for entry of the official record in to the General Inspection database on an on-going basis.



1.9.3 CHECKLIST INFORMATION HEADER

1.9.3.1 The header to the checklist provides the ability to collect information that will be useful to the inspector for completion of the subsequent official GID Action record of the function accomplished.

1.9.4 COMPLETION OF CHECKLISTS

1.9.4.1 The completion instructions for those checklists that are constructed with the following header are—

- a. Check S (SATISFACTORY) column if you reviewed the record, procedure or event and have no comment.
- b. Check U (UNSATISFACTORY) column if you reviewed the record, procedure or event and have a comment.
- c. Check NS (not seen) column if you did not review the record, procedure or event or you do have adequate information to make a valid comment
- d. Check NA (not applicable) column, if the line item is not required in this particular situation.
- e. Make notes regarding an UNSATISFACTORY answer for resolution.

Date		Registration	
Inspector		AC MMS	
Location		Crew #	
Organization		Rep Name	

- f. For later reference, precede any notes with the appropriate question number

1.10 GENERIC CERTIFICATION PROCESS

1.10.1 GENERIC PROCESS

1.10.1.1 The general process of approval or acceptance of certain operations, programmes, documents, procedures, methods, or systems is an orderly method used by the CAASL-FS to ensure that such items meet regulatory standards and provide for safe operating practices.

1.10.1.2 It is a modular, generic process that can be applied to many types of approval or acceptance tasks.

1.10.1.3 The process consists of five distinct yet related phases and can result in approving or not approving, accepting or not accepting an operator's proposal.

1.10.1.4 It is important for an inspector to understand that the process described in this section is not all inclusive, but rather a tool to be used with good judgment in conducting day-to-day duties and responsibilities.



1.10.2 UNDERSTANDING THE PROCESS

1.10.2.1 This section provides aid in understanding and applying this process. It is essential to understand that this process may result in a decision to not approve or not accept an operator's proposal. The process described is used to assist in making either positive or negative determinations.

1.10.2.2 This general process applies to many tasks described throughout the handbook. Each chapter section describing an approval or acceptance task supplements the general process by outlining specific requirements for each phase.

1.10.3 PHASE ONE - PRE-APPLICATION

1.10.3.1 The first phase starts when an operator, a person, an aviation interest group, or the CAASL-FS inquiries about or states a need for a change in some aspect of an aviation activity. Phase one is initiated by the following two possible actions:

1.10.3.2 Applicant Initiation

- a. A person or operator conveys to the CAASL-FS a need that is related to its operation. This "need" may be a requirement for CAASL-FS approval or acceptance. For example, an operator may need, want, or be required to have a minimum equipment list (MEL) change. The operator initiates the process by inquiring about the correct procedures to receive approval from the CAASL-FS for the change.
- b. During initial inquiries, it is important for the CAASL-FS and the operator to become familiar with the subject matter. If, for example, an operator requests an operational approval, the inspector must take the following actions—
 - Become thoroughly familiar with existing CAASL policy and approval requirements
 - Become familiar with the appropriate technical material
 - Accurately assess the character and scope of the proposal
 - Determine if a demonstration is required
 - Determine the need for any coordination requirements
 - Ensure that the operator has a clear understanding of the minimum requirements that constitute an acceptable submission
 - Determine the date the operator intends to implement the proposal

1.10.3.3 CAASL-FS Initiation

- a. Phase one may also begin when the CAASL-FS conveys to the operator or person a requirement related to its operation which must be approved or accepted.
 - For example, a principal inspector may require an operator to publish, in the approved company aircraft operating manual, information on low speed buffet.
- b. The operator must research and understand that subject area before submitting a proposal to the CAASL-FS for evaluation.

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- c. The principal inspector should act in an advisory capacity to the operator during the preparation of the submission. Such advice may include the following
- The necessity for a deviation, authorization, waiver, or exemption
 - The necessity for required demonstrations
 - Clarification of ANR requirements or advisory information
 - Sources of specific technical information
 - Acceptable standards for submission

1.10.3.4 **Operator Responsibility**

- a. The common element, regardless of whether an action is initiated by an operator or the CAASL-FS, is the effort expended by the operator.

1.10.3.5 **CAASL-FS/Applicant Communication**

- a. In phase one, the inspector must ensure that the operator clearly understands the form, content, and documents required for the submission to be acceptable to the CAASL-FS.
- b. The operator must be informed of the need and benefits of submitting required documents as early as possible and of its responsibility to advise the CAASL-FS, in a timely manner, of any significant changes in the proposal.

1.10.3.6 **Phase One Summary. Phase one of the process is illustrated as follows—**

- a. Operator makes inquiry or request to CAASL-FS; or
- b. CAASL-FS requires operator to take an action;
- c. CAASL-FS and operator develop understanding of subject area;
- d. Operator understands form, content, and documents required for acceptable submission.

1.10.4 **PHASE TWO - INITIAL APPLICATION REVIEW**

1.10.4.1 **Operator's Proposal**

- a. Phase two begins when the operator formally submits a proposal for CAASL-FS evaluation. The request may be submitted in a variety of ways.
- b. The inspector's first action, in phase two, is to review the operator's submission to ensure that the proposal is clearly defined, and the documentation specified in phase one has been provided. The required information must be complete and detailed enough to permit a thorough evaluation of the operator's capability and competence to fully satisfy the applicable regulations, national policy, and safe operating practices.

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1.10.4.2 Proposal Reviewed by CAASL-FS for Completeness

- a. Phase two does not include a detailed operational and technical evaluation or analysis of the submitted information (see phase three). However, in phase two the submission must be examined in sufficient detail to assess the completeness of the required information.
- b. If the operator's submission is not complete or the quality is obviously unacceptable, it must be returned immediately with an explanation of the deficiencies, before any further review and evaluation is conducted.
 - Normally, unacceptable submissions should be returned with a written explanation of the reasons for its return.

1.10.4.3 Resolving Issues

- a. In complex cases, a meeting with the operator and its key personnel may be necessary to resolve issues and agree on a mutually acceptable solution.
- b. If mutual agreements cannot be reached, the inspector must terminate the meeting, inform the operator that the submission is unacceptable, and return the submission.
- c. If all parties are able to reach agreement on measures to correct omissions or deficiencies, and the applicable principal inspectors determine that the submission is acceptable, the operator will be so informed, and phase three begins.

1.10.4.4 Phase Two Summary. Phase two of the process is illustrated as follows—

- a. Operator submits proposal;
- b. CAASL-FS makes initial examination of the documents for completeness with respect to requirements established in phase one;
- c. CAASL-FS returns submitted proposal; or
- d. CAASL-FS accepts submitted proposal.

1.10.4.5 It is important for the inspector involved to keep the operator advised of the status of its proposal. If the inspector takes no other action, or if the submission is deficient and not returned in a timely manner, the applicant may assume that the CAASL-FS has tacitly accepted the submission and is continuing with the process. Timeliness of action depends on the situation as well as inspector judgment and is discussed in pertinent sections of this handbook.



1.10.5 PHASE THREE - DOCUMENT CONFORMANCE

1.10.5.1 Detailed Analysis

- a. Phase three is the CAASL-FS's detailed analysis, review, and evaluation of the operator's proposal. These actions may take place entirely within a field office, at the site of operations, or at both facilities.
- b. In phase three the CAASL-FS evaluation is focused on the form, content, and technical quality of the submitted proposal to determine that the information in the proposal meets the following criteria—
 - Is not contrary to any applicable ANR requirement
 - Is not contrary to the direction provided in this handbook or other safety-related documents
 - Provides for safe operating practices

1.10.5.2 Evaluation Criteria

- a. A criterion for evaluating the formal submission is found in the applicable chapters of this handbook. The inspector must ensure that the documents adequately establish the operator's capability and competence to safely conduct operations in accordance with the submitted proposal.

1.10.5.3 Addressing Deficiencies

- a. During phase three the CAASL-FS inspector must, in a timely manner, address any deficiencies in the submitted material before proceeding to subsequent phases.
- b. Discussion with the operator may be sufficient to resolve certain discrepancies or questions or to obtain additional information.
- c. It may be necessary to return certain sections of the submission to the operator for specific changes. However, when an inspector determines that, for specific reasons, the material is grossly deficient or unacceptable, the inspector must return the entire submission to the operator with an appropriate explanation and immediately terminate this phase.
- d. If the results of the evaluation are acceptable and a demonstration requirement exists, the inspector may need to grant some form of conditional, initial, or provisional approval to the proposal before continuing with the process.

1.10.5.4 Phase Four Planning

- a. An important aspect of phase three is for CAASL-FS inspectors to begin planning the conduct of phase four.



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- b. While evaluating the operator's formal submission, inspectors should begin to formulate plans to observe and evaluate the operator's ability to perform. These plans must be finalized before the actual demonstrations.

1.10.5.5 Phase Three Summary

- a. Phase three is illustrated as follows—
 - CAASL-FS evaluates the formal submission for compliance with ANR requirements, compliance with the direction provided in the CAASL-FS aviation safety publications, other safety-related documents and safe operating practices:
 - When results of CAASL-FS evaluation are unsatisfactory, return submission to the operator for correction and/or terminate the phase:
 - Begin planning phase four (if required):
 - When results of CAASL-FS evaluation are satisfactory, proceed with phase four (if demonstration required) and if appropriate, grant conditional approval or acceptance; or
 - Proceed to phase five if demonstration not required.

1.10.6 PHASE FOUR - INSPECTION & DEMONSTRATION

1.10.6.1 Operator's Demonstration

- a. In phase four the CAASL-FS finalizes plans to observe and evaluate the operator's demonstration of its ability to perform in accordance with the procedures, guidelines, and parameters described in the formal proposal.

Phase four is an operational evaluation of the operator's ability to function in accordance with the proposal evaluated in phase three.

- b. Usually, these demonstrations are required by regulation, and some examples include the following—
 - Conduct of training
 - Demonstrations of knowledge
 - Conduct of qualification scenarios
 - Demonstrations of processes
 - Demonstration flights
 - Validation flights

1.10.6.2 Evaluation of Demonstrations

- a. The criteria and procedures for evaluating an operator's demonstrated ability are described in his and other CAASL-FS manuals.
- b. The inspector must plan for the conduct and observation of the demonstration to include such factors as participants, evaluation criteria, and sequence of events.
- c. During these demonstrations it is normal for minor discrepancies to occur.

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- Discrepancies can often be resolved during the demonstration by obtaining commitments from responsible company officials.
 - The inspector responsible for overseeing a demonstration must evaluate each discrepancy in terms of its overall impact on the operator's ability and competence to conduct the proposed operation.
- d. The inspector must stop the demonstration in phase four when gross deficiencies or unacceptable levels of performance are observed.
- e. The inspector must identify the phase of the general process for approval or acceptance to which the applicant must return, or decide to terminate the process entirely when it is clear that continuation would not result in approval or acceptance.
- For example, if an simulator scenario demonstration is unsatisfactory due to equipment failure, it may be appropriate to require the operator to re-enter the process at phase four and conduct another demonstration
 - If the demonstration is unacceptable because crewmembers were unable to perform their assigned duties, it may be appropriate to advise the operator that the process is terminated pending review and evaluation of the operator's emergency training programme, and that the operator may need to re-enter the process at phase two (that is, submit a new proposal).
- f. If the CAASL-FS evaluation of the operator's demonstrated ability is acceptable, the process continues.

1.10.6.3 Phase Four Summary

- a. Phase four of the process is illustrated as follows—
- CAASL-FS plans for the conduct and observation of the demonstration;
 - Operator demonstrates ability;
 - Demonstration unsatisfactory; or
 - Demonstration satisfactory.
- b. An operator shall not be authorized to conduct any particular operation until all air-worthiness and operations requirements are met and the operator is clearly capable of conducting a safe operation in compliance with ANR regulations and safe operating practices.

1.10.7 PHASE FIVE - FINAL CERTIFICATION ACTIONS

1.10.7.1 Approval or Acceptance

- a. In phase five the CAASL-FS approves or accepts the operator's proposal. If the proposal is not approved or accepted, the operator is notified in phase three or four.

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1.10.7.2 Indicating Approval

- a. Approval is granted by letter, by a stamp of approval, by the issuance of operations specifications, or by some other official means of conveying approval.
- b. The specific methodology is outlined in the AOC Administration Manual.
- c. The following are examples of approvals granted by the CAASL-FS—:
 - All-weather terminal operations
 - Training programmes
 - MEL & CDL
 - ETOPS
 - Cockpit checklist
 - Company Aircraft Operating Manuals (limitations, performance, and operating procedures)
 - Air navigation operations
 - EFB

1.10.7.3 Acceptances

- a. Other proposals, submissions, or requests not requiring specific CAASL-FS approval but required to be submitted to the CAASL-FS are items that are presented for acceptance.
- b. Acceptance of an operator's proposal may be accomplished by various means, including a letter, verbal acceptance, or by taking no action, which indicates there is no CAASL-FS objection to the proposal. Methods and procedures used to accept operator proposals or submissions, when appropriate, are discussed in the AOC Administration Manual.

1.10.7.4 Phase Five Summary

- a. Phase five is illustrated as follows—
 - CAASL-FS approves submission: or
 - CAASL-FS accepts submission
- b. Sometimes CAASL-FS approval or acceptance of an operator's proposal may be conditional in nature.
 - For example, a training programme may be initially approved pending CAASL-FS evaluation of the flight simulator to be used in that programme.

1.10.8 SUMMARY OF PROCESS

- 1.10.8.1 The general operational approval or acceptance process, as described, is referenced (in terms of the five phases) with the specific task requirements for each applicable job function.

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- 1.10.8.2 It is important for the inspector to understand the modular concepts inherent in the process, the overall interrelationship of the phases, and that this general process is not all-inclusive, but a tool to be used in the inspector's day-to-day duties and responsibilities.

1.11 PARA-TECHNICAL AND TECHNICAL QUALIFICATIONS

1.11.1 AUDITOR FUNCTIONS REQUIRING PARA-TECHNICAL QUALIFICATIONS

- 1.11.1.1 To perform the auditor functions, the CAASL-FS employs ground operations inspectors. Cabin safety inspectors, flight operations, airworthiness (engineer) and airworthiness (avionics) inspectors.
- 1.11.1.2 Each of these persons will be used as auditors in those certification and surveillance functions that they are qualified and trained to perform.
- 1.11.1.3 All inspectors must be qualified to perform the para-technical auditing functions in their specialties that relate to aviation law, regulations and CAASL-FS guidance.
- Para-technical examples include the auditing required during the formal application phase where the documents are reviewed for conformance with the general standards applicable to document acceptance.
 - Another para-technical example would be the auditing of a conformance checklist by comparison to the referenced documents.

1.11.2 AUDITOR FUNCTIONS REQUIRING TECHNICAL QUALIFICATIONS

- 1.11.2.1 Those inspectors that have technical experience and qualifications in a specific aviation certificate areas, such as a pilot or an engineer qualified on a specific aircraft type in the certification process, will be used to conduct auditing functions on behalf of the CAASL-FS where it is necessary to audit technical safety procedures and relevant safety practices.
- 1.11.2.2 Those job tasks that require the evaluation of a technically qualified auditor are identified in this manual in the technical references section.
- Examples include: the primary auditor of aircraft (pilot) checklists will be a qualified pilot, preferably qualified in that type of aircraft; the primary auditor of a maintenance practice on a specific aircraft will be experienced and/or trained on maintaining that type of aircraft.
 - The primary auditor of a dispatcher training curricula will be qualified in the technical procedures and relevant safety practices associated with the job function.

1.11.3 TECHNICAL QUALIFICATIONS ADD OTHER ROLES

- 1.11.3.1 Inspectors who have the technical qualifications may perform other significant roles in the administration of a CAASL safety oversight programme.
- They should be used as “technical advisors” to the government on the technical safety practices in use.

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- b. They should also be used as technical investigators to provide a technical perspective to occurrence and accidents investigations.
- c. They should be used as “technical evaluators” on behalf of the government to evaluate the conduct of technical processes, such as proficiency checks or maintenance practices.

1.12 INSPECTORS’ CREDENTIAL

- 1.12.1 The inspectors’ credential issued by the CAASL Director General is the recognized method for identifying yourself as a CAASL-FS inspector for any situation where you are involved in the inspection of Sri Lanka or foreign air operators at any location in Sri Lanka.
- 1.12.2 This credential grants the inspector right-of-access to any facilities, personnel, records and aircraft (regardless of registration) engaged in operations in Sri Lanka.
- 1.12.3 It also grants the inspector right of access anywhere in the world to the maintenance and operational facilities, personnel, records and aircraft used in operations by a Sri Lanka-licensed pilot or Sri Lanka AOC holder.

1.13 INSPECTORS’ QUALIFICATIONS FOR AOC CERTIFICATION

- 1.13.1 Each operations member of a certification team should normally have at least twelve months relevant experience in his or her area of responsibility within the team, in the appropriate discipline.
 - 1.13.1.1 Inspectors who do not meet this requirement may be attached to the team but may not be primary members (unless the CAASL-FS Director issues a waiver).
 - 1.13.1.2 An inspector who does not have this experience in the requisite technical discipline, but who has completed a full certification as an attached inspector, may be appointed to a subsequent certification team.
- 1.13.2 At least one flight operations and one airworthiness inspector should normally be qualified or trained on the aircraft type(s) proposed for operation by the applicant.
- 1.13.3 Except in unforeseen circumstances, this team should be allowed to complete the certification project without a change in the team membership.
- 1.13.4 When possible at least one FOI must have qualification on the aircraft type prior to conducting
 - a. Approval of training programmes
 - b. Approval of crew member checking methods
 - c. Acceptance of the aircraft operations Manual
 - d. Approval of the MEL
 - e. Approval of all-weather operations
 - f. Approval of ETOPS operations
 - g. Surveillance of demonstration flights; or
 - h. Flight simulator acceptance; or
 - i. Check Pilot appointments.

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1.13.5 Other Inspectors should have an understanding of the type of aircraft equipment, navigational systems and/or proposed techniques.

1.14 PROVIDING NECESSARY INITIAL INSPECTOR TRAINING

1.14.1 APPLICANT'S RESPONSIBILITY

1.14.1.1 The AOC holder or applicant planning to introduce a new type of aircraft must arrange for and carry all expenses for a CAASL-FS selected inspector in the training and qualifying of the first group of the applicant's pilots to be trained.

- a. Following this training, the assigned inspectors will be devoted primarily to the applicant's certification for the aircraft type until the issuance of the AOC or the amendment to the AOC

1.14.2 TRAIN WITH THE APPLICANT'S PERSONNEL

1.14.2.1 The applicant or AOC holder is responsible for providing appropriate training when sufficiently qualified staff is not available.

- a. One acceptable method of achieving this trainings to have the applicant schedule one FOI and other CAASL-FS required personnel for training with the initial group of company personnel.

1.14.2.2 An advantage of this method is that the FOI is then capable of assessing the acceptability of the course and the instructors.

- a. An operational advantage is that the FOI and the applicant's initial group of pilots (who are customarily the supervisory group within the company) are in a position to exchange ideas on the training and the operation of the aircraft, as the course progresses.
- b. This offers the prospect of modifications being mutually agreed on the spot.

1.14.3 TRAIN SEPARATELY FROM THE APPLICANT'S PERSONNEL

1.14.3.1 Alternatively, there are advantages in training CAASL-FS staff separately from the applicant's staff, one of that is greater objectivity in assessing the applicant.

- a. It can also result in the completion of training before the commencement of the certification process. In general, the earlier the CAASL-FS staff can be trained, the more time will be available to assess the technical aspects of the proposed operation, and consequently the greater the prospect of a speedy and smooth processing of the AOC.

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1.15 ACCOMPLISHMENT OF AIRCRAFT-SPECIFIC FLIGHT CHECK EVALUATIONS

1.15.1 FOI QUALIFICATIONS

1.15.1.1 Unless functioning under a waiver issued by the CAASL-FS Director, FOIs conducting approval inspections must be rated and/or qualified to exercise the privileges of pilot in command on the type aircraft for which approval is sought, and must have completed personal training on that type appropriate to the level of check approval being assessed — that is—

- a. To conduct an route check pilot evaluation, the FOI must aircraft have flown the aircraft in normal operations; and
- b. To conduct a simulator proficiency test, the FOI must have flown the proficiency check in the simulator; and
- c. To conduct an aircraft flight proficiency evaluation involving emergency or abnormal manoeuvres, the FOI must have flown the relevant emergency or abnormal manoeuvres in the aircraft; and
- d. To conduct a simulator type rating and training approval, the FOI must have flown the relevant manoeuvres in the simulator; and
- e. To conduct an aircraft rating approval, the FOI must have flown the relevant qualification manoeuvres in the aircraft.

1.15.1.2 Unless functioning under a waiver issued by the CAASL-FS Director, this personal training must have been completed within the previous twelve months if the evaluation will be accomplished in a simulator; seven months if the evaluation will be accomplished in an aircraft.

1.15.2 FOI FLIGHT CHECK CONDUCT

1.15.2.1 The FOI must outline the intended format of the approval inspection and ensure the nominee for check approval understands what is expected.

1.15.2.2 If the inspector intends to ask the pilot who will be the subject of the check (that is, the pilot being checked by the nominee) to introduce deliberate errors, he or she should do so in private before the briefing.

1.15.2.3 During the briefing and debriefing the FOI should occupy a seat at the rear or to the side, and should not intervene in the conduct of the briefing or debriefing. He or she may discuss the briefing with the nominee at the end of the briefing, or leave the discussion until the end of the inspection, at his or her discretion.

1.15.2.4 During the flight, for other than assessment of the nominee's personal proficiency, the FOI should occupy an observer's seat on the flight deck of the aircraft or simulator. He or she may ask the nominee to perform or repeat manoeuvres as required in the course of demonstrating personal proficiency and he or she may ask that the subject repeat manoeuvres in the course of the check or training session. In requesting such additional or repeated

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manoeuvres, the FOI should be conscious of the effect on time and cost, and should not extend the duration of the inspection without good cause. Apart from such requests (if any), the FOI should not intervene in the conduct of a check.

- 1.15.2.5 In a simulator, when the FOI asks for a manoeuvre to be performed, it is a requirement. In an aircraft it is a request that the pilot in command may veto if he or she believes the safety of the aircraft may be jeopardized.
- Where the FOI requires a particular manoeuvre to be demonstrated or completed in an aircraft, and the pilot in command elects not to comply on the grounds of safety, the FOI may cancel the approval inspection.
 - It would be normal, in that event, to reschedule the approval for a later date.
- 1.15.2.6 Following the debriefing segment, the FOI is to review the approval inspection with the nominee concentrating on areas, which could or should be improved. The FOI should then test the nominee on the standards applicable to the category of approval sought, and on the responsibilities of check staff to CAASL-FS and to his or her own training organization policy and procedures.
- 1.15.2.7 The FOI may terminate the approval inspection at any stage if he/she is of the opinion that the nominee's performance is less than the minimum competency standards. Where, as part of the approval inspection, the subject pilot under check was undergoing a genuine proficiency check or instrument rating renewal, the FOI may permit the check to proceed and himself determine the standard of the pilot under check. It is accordingly possible for the pilot nominated for check approval to fail and for the subject pilot to pass.
- 1.15.3 OCCUPY A CONTROL SEAT WITH THE INTENTION OF MANIPULATING THE CONTROLS**
- 1.15.3.1 Synthetic flight trainer instructors are normally required to provide their own simulator and check pilots are normally required to provide their own aircraft and supporting flight crew, where appropriate.
- 1.15.3.2 Normally, the check pilots and their supporting staff act together as a crew and the Inspector occupies an observer's seat on the flight deck.
- 1.15.3.3 If the aircraft is not fitted with an observer's seat, or where the check pilot is unable to provide a supporting pilot, the Inspector may be asked to occupy a control seat during the inspection. When considering such a request, the Inspector must be aware that he or she may compromise the test by taking an inappropriate part during the conduct of the inspection.
- 1.15.3.4 The check pilot may be able to claim that he or she failed because of some input or lack of input from the Inspector as a crewmember. Furthermore, the Inspector's ability to assess the conduct of the flight as a whole will be degraded if he or she is an active crewmember.
- 1.15.3.5 The Inspector may agree to occupy a control seat, provided that in addition to meeting the qualifications appropriate to the inspection: The Inspector is invited to do so by a competent authority within the organization nominating the check pilot and providing the vehicle for the test. The Inspector must be satisfied that the person issuing the invitation is

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empowered to do so. The Inspector has the permission of the CAASL-FS Director to accept the invitation. Before giving permission, the manager must consider the Inspector's experience and competence, and may issue special instructions to the Inspector, limit or restrict the duties to be undertaken by the Inspector, or veto the proposal.

1.15.3.6 In the case of multi-pilot aircraft, the Inspector meets the company recency requirements applicable to the duties to be undertaken. In addition, he or she must be satisfied that his or her familiarity with the company's procedures is such that he or she can fully integrate with the other crewmembers on the flight deck. The Inspector's role and responsibilities as a crewmember are clearly defined and agreed to by the operator and the crew.

1.15.4 NOT AS PILOT IN COMMAND OF AN APPLICANT'S AIRCRAFT

1.15.4.1 The Inspector may not act as a pilot in command of an AOC holder's aircraft: During the conduct of any flight check, the inspector is not the pilot in command. This does not prohibit the inspector from being in a control seat during single pilot flight checks.

1.15.4.2 The only time a flight operations inspector may be eligible to fly as a crewmember is during an AOC holder's operations that are other commercial air transport or aerial work. The inspector must be properly qualified to function in that position and a qualified pilot-in-command is occupying the other control seat.

1.15.4.3 To act as a required crewmember, there must be a specific memo of understanding for the Inspector to act as a pilot in commercial air transport between the CAASL-FS Director and the AOC holder's Manager of Operations. The pilot must have received all training, proficiency checks, line checks, and currency required by the applicable civil aviation legislation.

1.15.5 GENERAL AVIATION OPERATIONS

1.15.5.1 A flight operations inspector current and qualified in the aircraft may be allowed to fly the aircraft providing the conditions applicable to the occupancy of a control seat have been met. The inspector must have personally flown the manoeuvres about to be undertaken in that type of aircraft within the preceding seven months.

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Chapter 2 - GENERAL INSPECTION GUIDELINES

2.1 OBJECTIVE OF AN INSPECTION

- 2.1.1 The primary objective of any inspection is to determine that a person, an item, or a certain segment of an operation associated with commercial air transport meets at least the same standards that were required for initial certification or approval by the CAASL-FS.
- 2.1.2 For inspectors to make these determinations, inspections must be conducted in an orderly and standardized manner.
- 2.1.3 To accomplish this, each type of inspection must have individual objectives and be conducted each time in generally the same manner, according to the direction and guidance in this manual and with appropriate checklists.

2.2 CHARACTERISTICS OF AN INSPECTION

2.2.1 GENERAL CHARACTERISTICS

2.2.1.1 Inspection is a specific event (work activity) which has the following characteristics—

- a. A specific work activity title and Action activity code
- b. A definite beginning and a definite end
- c. Specific objectives to be met
- d. General procedures to be followed
- e. A report of findings

2.2.1.2 Each type of inspection is identified with a specific title. Also, each type of inspection is assigned a specific Action code for the purpose of computer recording and tracking and for reference in the planning and tracking of inspection activities.

2.3 DEFINITE BEGINNING AND END

- 2.3.1 Inspections have a definite beginning and end. They may be scheduled by an inspector for the observation and evaluation of a specific activity, such as a proficiency check, or they may be scheduled for the evaluation of operator documents, manuals, or approved programmes.
- 2.3.2 A specific inspection activity occurs and is completed during one day. This policy applies whether only one inspection element or all possible elements of that inspection are completed in one day. The inspector must generate an inspection report, with any identified safety issues, for that inspection on that day.
- 2.3.3 If the inspector does not complete all inspection items, he may return over a series of days to fully complete all elements of that inspection. A separate inspection report shall be entered for

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each day that the specific type of inspection was conducted. Any safety issues shall be entered in the report on the day those issues were identified.

2.3.4 STANDARDISED APPROACH

2.3.4.1 Inspections have general procedures that inspectors should follow for standardization purposes. These general procedures are outlined in this chapter.

2.3.4.2 In many cases, there are checklists for the type of inspection which contains lists of specific items or areas which should be observed and evaluated, when applicable, during the inspection. These checklists are included throughout the CAASL-FS manual system.

2.3.5 DETERMINATION OF COMPLIANCE

2.3.5.1 The primary objective of any inspection is to determine that a person, item, or segment of an operation complies or continues to comply with regulations, safe operating practices, and other established standards.

2.3.5.2 Each inspection type, however, has specific objectives, which are discussed in respective sections of this chapter.

2.3.6 INSPECTION REPORT REQUIRED

2.3.6.1 An inspection is not complete until a report on the results of the inspection has been recorded.

- a. This report of inspection results is usually recorded on the Action report.
- b. The inspection report is the key element of any inspection.

2.3.6.2 Inspectors must be concise, factual, and objective in reporting inspection results.

2.4 CONDUCTING AN INSPECTION

2.4.1 Due to the complexity of the air transportation industry there are various types of inspections, each type with specific objectives.

2.4.2 When deciding which type of inspection to conduct, inspectors should consider the objectives of each type of inspection and determine the type most appropriate and effective for a particular situation.

2.4.2.1 An inspector's decision to conduct a particular type of inspection may be based on an isolated situation, such as a complaint or an incident, or on some other information that raises a question about compliance with a regulation or safe operating practice.

2.4.2.2 In most situations, however, the types of inspections that need to be conducted are determined by the DFS and principal inspectors during the development of inspection programs.

- a. These determinations are based on the analyses of previously collected surveillance data and other related information.

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2.5 PREPARING FOR AN INSPECTION

- 2.5.1 Before conducting an inspection, inspectors should to the extent possible, familiarize themselves with an operator's systems, methods, and procedures.
- 2.5.2 To obtain this familiarization, inspectors can review those sections of the operator's manuals pertinent to the type of inspection to be conducted.
 - 2.5.2.1 Additional familiarization can be obtained by an inspector questioning and discussing the operator's systems, methods and procedures with principal inspectors and with other inspectors already acquainted with the operator.
 - 2.5.2.2 When possible, inspectors should become aware of any previous deficiencies or negative trends by reviewing previous surveillance data pertinent to the type of inspection to be conducted.
 - 2.5.2.3 Inspectors must be acquainted with the applicable direction and guidance in this manual for the type of inspection to be conducted.

2.6 ADVANCE NOTICE OF AN INSPECTION

- 2.6.1 Most inspections will cause some disruptions to routine operations. Responsible operators engaged in commercial air transport understand the legal basis for CAASL-FS surveillance and are generally cooperative in responding to the needs of inspectors during the conduct of inspections.
 - 2.6.1.1 Operators are required to afford inspectors the opportunity to conduct inspections in a manner that effectively accomplishes the objectives of the inspections.
 - 2.6.1.2 Inspectors should, however, arrange their inspection activities so they will result in a minimum amount of disruption to routine operations.
 - 2.6.1.3 Advance notice should be given for inspections which take operator personnel away from their normal duties, such as records inspections.
 - 2.6.1.4 Such advance notice is usually unnecessary for those inspections which result in only a minimal involvement of operator personnel. Examples of inspections in which advance notice serves little purpose include ramp inspections.

2.7 LIMITING THE SCOPE OF AN INSPECTION

- 2.7.1 Each type of inspection has a set of items or areas that inspectors should observe and evaluate during the inspection.
- 2.7.2 Sufficient time should be allotted for effective evaluation of all the items or areas.
- 2.7.3 The circumstances, under which inspections are conducted however, vary considerably. Often inspectors will not be able to evaluate all the specified items or areas.

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2.7.3.1 The more important consideration is to thoroughly and qualitatively evaluate those items or areas in which the inspector has the time and opportunity to observe.

- a. In some circumstances, it may be preferable for an inspector to limit the scope of a particular inspection type to ensure the quality of the inspection.

2.7.3.2 When an inspection is limited in scope, the inspector should provide a comment on how it was limited, and indicate it by either recording the number or types of records or manuals evaluated, recording the general areas evaluated, or by recording the general areas not evaluated.

2.7.3.3 In general, it is better to schedule sufficient time to evaluate all the items or areas specified for an inspection type. Inspections that are limited in scope, however, do serve a useful purpose and can still provide valuable information.

2.8 INSPECTOR CONDUCT

2.8.1 The actions and conduct of an aviation safety inspector are subject to close scrutiny by the personnel they encounter during the performance of an inspection. Inspectors must conduct themselves as aviation professionals at all times when conducting inspections.

2.8.1.1 When initiating an inspection, inspectors shall properly identify themselves and ensure that the appropriate operator personnel are fully aware of the type and purpose of the inspection being conducted.

2.8.1.2 Inspectors shall wear name tags or other appropriate identification in plain view during the conduct of the inspections.

2.8.1.3 When observing or evaluating operator personnel during the performance of their assigned duties, inspectors shall not intervene in a manner that could adversely hinder or preclude them from effectively performing their duties.

2.9 CONCLUDING AN INSPECTION

2.9.1 At the conclusion of an inspection, inspectors should usually debrief appropriate operator personnel of the inspection results.

2.9.1.1 Persons, items, or areas that were found to meet or exceed standards should also be commented on during the debriefing.

2.9.1.2 Post inspection debriefing must include an explanation of any deficiencies that were found during the inspection.

2.9.1.3 Appropriate operator personnel must be informed of any areas that will require some form of follow up action.

2.9.1.4 If it appears that a regulation has been violated, inspectors must inform responsible operator personnel that an investigation into the apparent violation will be initiated.

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- 2.9.2 When an inspector is unable to debrief the appropriate operator employees on any deficiencies because those employees are not available, the inspector should indicate in the inspection report that the operator was not briefed on the deficiencies.
- 2.9.3 Isolated types of deficiencies found during an inspection can often be corrected by operator personnel while the inspection is being conducted.
- 2.9.3.1 Such deficiencies can be adequately resolved and closed out during the post inspection debriefing.
- 2.9.3.2 In these cases, however, inspectors should record information about the deficiency and how it was corrected on the inspection report because such information is useful for trend evaluations.
- 2.9.4 The preparation of the inspection report is the final action that must be taken by inspectors to conclude an inspection. All reports on specific types of inspections shall be recorded by Action report entry.

2.10 PROCEDURES FOR CONDUCTING A RECORDS INSPECTION

2.10.1 LOCATION

- 2.10.1.1 Inspectors normally conduct a records inspection at the place where the operator maintains the records.
- 2.10.1.2 The inspection process does not require that the operator surrender records, even temporarily, and records may not be removed from the operator's premises without the operator's permission.
- 2.10.1.3 Should an agreement be reached for inspectors to remove records, the operator must be given an itemized receipt for all records.

2.11 PREPARATION AND INITIAL BRIEFING

- 2.11.1 Normally, advance notice, to the operator, of a planned records inspection is appropriate.
- 2.11.1.1 An introduction and initial briefing should be given to the operator. The briefing should describe the purpose of the inspection, what records will be required, and that a debriefing will take place at the conclusion of the inspection.
- 2.11.1.2 Prior to conducting any records inspections, inspectors must become familiar with the operator's system of record keeping and become familiar with which specific records are available at the facility. This familiarization is particularly important when the operator is using a computer based record keeping system.
- 2.11.1.3 Prior to their arrival, inspectors should prepare a list of records to be inspected since a records inspection uses the operator's work space and usually takes time away from an employee's assigned duties.

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- a. Preplanning and preparation for a records inspection reflect positively on the professionalism of the CAASL-FS and should result in as little disruption to the operator's work routine as possible.

2.11.2 RECORDS SELECTION

- 2.11.2.1 Before conducting a records inspection, inspectors must determine the number of records to be examined, which categories of the records that will be inspected, and to what depth records will be scrutinized.

2.11.3 RECORDS HANDLING

- 2.11.3.1 Care should be taken to keep records as intact as the operator presents them.
- 2.11.3.2 The preferred procedure is for inspectors to take only a few records at a time, examine them, then return that batch to the operator before starting on another batch.
- 2.11.3.3 If it is necessary or desirable to obtain a copy of a record, the operator may not be willing or able to provide it. In this case, inspectors must make arrangements for copies.

2.11.4 ERRORS OR OMISSIONS IN RECORDS

- 2.11.4.1 A records inspection is not an investigation, yet inspectors may find errors or omissions in an operator's records.
- 2.11.4.2 Minor errors and omissions may not constitute a lack of compliance on the part of the operator and may not require the inspector to initiate enforcement action.
- 2.11.4.3 Some errors or omissions, though, may require further action.
 - a. For example, a crewmember training record may be found that does not indicate that required recurrent training was accomplished.
- 2.11.4.4 Further investigation may produce evidence that the training actually was completed.
- 2.11.4.5 This omission may easily be corrected on the spot by the operator and may preclude the need for the inspector to initiate enforcement action.
 - a. In this case, the inspector should record in the GDI that the problem occurred, was brought to the operator's attention, and was corrected on the spot by the operator.
 - b. The inspector should discuss, with the operator, methods for preventing a repetition of the problem and should record, in the GDI, the operator's intended fix.
- 2.11.4.6 If the operator cannot produce evidence that the training was conducted, the inspector shall record the facts so that an enforcement investigation can later be opened.
 - a. The inspector who discovers the discrepancy is responsible for recording the finding in the GDI and initiating an investigation.



2.12 PRIOR NOTICE: SUMMARY OF ACTIONS

- 2.12.1 Give the operator notice of your intention to conduct an inspection of their operational records, so that the required documents and management representatives will be made available for the inspection. (Under some circumstances, you can make a spot check of operational records, without prior notification.)
- 2.12.2 Organise a discreet area to ensure minimal disruption to both yourself and the operator.
- 2.12.3 Remain on the operator's premises during the inspection, observe the appropriate level of confidentiality and refrain from marking or defacing any records.
- 2.12.4 Carry out the inspection, using the appropriate checklist, if available.
- 2.12.5 In your assessment of the operator's record-keeping system, consider the following—
 - a. Practicality
 - b. Accuracy and completeness
 - c. Accessibility
 - d. Security
 - e. Control.
- 2.12.6 Comment on the adequacy and effectiveness of the operator's record-keeping system.

2.13 SHORT NOTICE: SUMMARY OF ACTIONS

- 2.13.1 The general steps of any inspection are—
 - a. Give a management representative short notice of the inspection.
 - b. Carry out the inspection, in a way that causes a minimum of disruption to the operator, using the appropriate checklists.
 - c. Follow appropriate checklists and procedures when carrying out specific separate inspections. e.g. flight simulators.
 - d. Conduct a short exit meeting with the a management representative:
 - e. Briefly report the findings of the inspection.
 - f. Make arrangements for any follow-up action.
- 2.13.2 This evaluation guidance provides direction to operations inspectors for the inspection of crew and dispatcher qualification, training, and currency records of AOC holders.



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Chapter 3 - MANUAL EVALUATION GUIDANCE

3.1 OVERVIEW OF MANUAL REQUIREMENTS

3.1.1 IS 013 requires operators to prepare and keep current various manuals and checklists for the direction and guidance of flight and ground personnel conducting commercial air transport operations.

3.1.2 FLIGHT MANUAL

3.1.2.1 An approved flight manual is required to be carried aboard each aircraft for the guidance of crew members when conducting flight operations.

- a. A flight manual is any manual approved by the CAASL-FS that an operator uses to comply with this requirement.
- b. A flight manual may be an approved Airplane Flight Manual (AFM), an approved Rotorcraft Flight Manual (RFM), or an approved Company Aircraft Operating Manual (FCOM) for definitions).

3.1.3 GENERAL MANUAL

3.1.3.1 Each operator must prepare and keep current a manual providing guidance for all categories of flight and ground personnel conducting air transportation operations. Guidance for preparing the Operations manual is available in SLCAP4500.

- a. This requirement does not apply to single pilot operators and those operators granted a deviation from this requirement.
- b. For purposes of this chapter, the manual the operator prepares in compliance with is termed a "general manual."
- c. The operator's general manual must include the duties and responsibilities of each category of employee.
- d. The manual must also include adequate policy, direction, and guidance for the safe and efficient performance of the duties assigned to each category of employee.

3.1.3.2 The ANR only requires an operator to produce a single manual. In practice, however, a system of manuals is usually necessary, even for relatively simple operations. Operators have wide latitude in structuring their manuals.

3.2 DEFINITIONS

3.2.1 The following terms are defined according to their use in this handbook:

3.2.1.1 **"Accepted"**: "Accepted" is used to describe a document, manual, or checklist which does not have, or is not required to have, CAASL-FS approval.

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- a. Only a portion of an operator's manuals are required to have CAASL-FS approval. The remaining portions are "accepted" by the CAASL-FS.
- b. Operators are required to submit the entire general manual to the CAASL-FS for review.
- c. If the CAASL-FS concludes that an accepted section of the general manual is not in compliance, the CAASL-FS must formally notify the operator of the deficiency.
- d. Upon notification, the operator must take action to resolve the deficiency.

3.2.1.2 Flight Crew Operating Manual (FCOM): An approved aircraft flight manual that is developed by, or for, a specific operator for a specific aircraft type and which is approved by the principal inspector.

3.2.1.3 Airplane Flight Manual (AFM): An approved airplane flight manual is prepared by the manufacturer and approved by the State of Manufacture or Design.

3.2.1.4 "Alternate": When "alternate" is used to describe a procedure or checklist, it refers to a procedure which may be employed instead of another procedure. Alternate procedures may either be normal, non-normal, or abnormal procedures.

3.2.1.5 Amplified Procedure: A description of sequential procedural steps with detailed explanatory descriptions and/or instructions accompanying each step.

3.2.1.6 "Approved": When "approved" is used to describe a document, manual, or checklist, it means that a regulation requires CAASL-FS approval and that the CAASL-FS has evaluated and specifically approved the document, manual, or checklist.

3.2.1.7 Caution: An instruction concerning a hazard that if ignored could result in damage to an aircraft component or system - which would make continued safe flight improbable.

3.2.1.8 Checklist: A formal list used to identify, schedule, compare, or verify a group of elements or actions.

- a. Although a checklist may be published in a manual, it is usually intended to be used by itself, so that reference to a manual is made unnecessary.
- b. Checklists are usually formatted and presented on paper, however, they may be formatted on electronic or mechanical devices, or presented in an audio format.
- c. A checklist may or may not represent an abbreviated procedure. The items listed on a checklist may be unrelated and may not represent a procedure, such as most "normal" checklists. Abnormal and emergency checklists, however, do represent procedures.

3.2.1.9 "Document": A written description of a system, a method, or a procedure; a written statement of authorizations, conditions, or limitations; or a file of information. A document serves as an official record of understanding and agreement between the CAASL-FS and the operator as to the means the operator will use to comply with regulatory requirements. An approved document is not a manual.

Relevant information from a document, however, may be extracted and published in user manuals. For example, the operations specifications are not a manual but an approved document from which information is extracted.

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- 3.2.1.10 **"Emergency":** When "emergency" is used to describe a procedure or checklist, it refers to a non-routine operation in which certain procedures or actions must be taken to protect the crew and the passengers, or the aircraft, from a serious hazard or potential hazard.
- 3.2.1.11 **High Workload Environment:** Any environment in which multiple demands on the Flight crew necessitate the prioritizing of work functions. For example, IFR operations below 10,000 feet during arrival or departure from a terminal area (including taxiing) are considered to be high workload environments.
- 3.2.1.12 **Immediate Action:** An action that must be taken in response to a non routine event so quickly that reference to a checklist is not practical because of a potential loss of aircraft control, incapacitation of a crewmember, damage to or loss of an aircraft component or system - which would make continued safe flight improbable.
- 3.2.1.13 **Maintenance Control Manual (MCM):** That segment of an operator's general manual system which pertains to the airworthiness of aircraft. The MCM is one of two major segments of an operator's general manual.
- 3.2.1.14 **Manual:** A collection of the information, policies, procedures, and guidance prepared by an operator to instruct company employees in the performance of their assigned duties.
- 3.2.1.15 **"Non-normal" or "Abnormal":** When "non-normal" or "abnormal" is used to describe a procedure or checklist, it refers to a non-routine operation in which certain procedures or actions must be taken to maintain an acceptable level of systems integrity or airworthiness.
- 3.2.1.16 **"Normal":** When "normal" is used to describe a procedure or checklist, it refers to a routine operation (without malfunctions).
- 3.2.1.17 **Normal Checklist:** A checklist comprised of all of the phase checklists used sequentially in routine flight operations.
- 3.2.1.18 **Operations Manual, Part A:** That segment of the operations manual which applies to flight operational activities as opposed to airworthiness activities. The Ops Manual, Part A is one of two major segments of an operator's general manual.
- 3.2.1.19 **Phase Checklist:** A checklist used to establish and/or verify aircraft configuration during a specific phase of flight. An example of a phase checklist is an "after take-off checklist."
- 3.2.1.20 **Pilot Flying (P-F):** The pilot who is controlling the path of the aircraft at any given time, whether or not the aircraft is in flight or on the ground.
- 3.2.1.21 **Pilot Monitoring (P-M):** The pilot who is not controlling the path of the aircraft.
- 3.2.1.22 **Policy:** A written requirement established by an operator's management which is expected to be complied with by appropriate employee personnel. A policy may be within a procedure or stated separately. A written requirement such as, "No flight may depart on a cross-country flight without a spare case of oil" is an example of a policy.

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- 3.2.1.23 **Procedure:** A logical progression of actions and/or decisions in a fixed sequence which is prescribed by an operator to achieve a specified objective. In short, a procedure is step by step guidance on how to do something.
- 3.2.1.24 **Recommendation:** A preferred technique or action described by the operator which employees are expected to follow whenever practical. A recommendation is not a policy requirement.
- 3.2.1.25 **Rotorcraft Flight Manual (RFM):** An approved rotorcraft flight manual are prepared by the manufacturer and approved by the State of Manufacture or Design.
- 3.2.1.26 **“Shall”:** An action that is Mandatory
- 3.2.1.27 **“Should”:** An action that is recommended.
- 3.2.1.28 **“Supplemental”:** When "supplemental" is used to describe a procedure or checklist, it refers to a procedure which may be employed in addition to a normal, non-normal, or abnormal procedure. Supplemental procedures may either be normal or non-normal procedures.
- 3.2.1.29 **Systems Management:** The management of those systems which sustain the mechanical functions of the aircraft as opposed to the management of the aircraft's thrust, flight path, or aerodynamic configuration.
- 3.2.1.30 **Technique:** A method of accomplishing a procedural step or manoeuvre.
- 3.2.1.31 **User Manual:** A segment of an Operations Manual, Part A or a MCM that provides instruction, policies, procedures, and guidance to a specific category of employee. Examples of user manuals that are commonly used in the air transportation industry include the following:
- a. Flight operations policy manuals (FOPMs)
 - b. Airport analysis or data manuals
 - c. Security manuals
 - d. Cabin crew manuals
 - e. Flight dispatch manuals
 - f. Station operations manuals
 - g. Route and airport manuals
 - h. Hazardous material handling manuals
- 3.2.1.32 **Warning:** An instruction about a hazard that if ignored could result in injury, loss of aircraft control, or loss of life.

3.3 DISTRIBUTION AND AVAILABILITY OF MANUALS.

- 3.3.1 Each operator is required to maintain a complete manual (or set of manuals) at its principal base of operations and to furnish a complete manual (or set of manuals) to the CAASL-FS.

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- 3.3.2 In addition, each operator must make available or furnish applicable parts of the manual (user manuals) to flight and ground operations personnel who conduct or support flight operations.
- 3.3.3 The manual may be in conventional paper format or in another form that is convenient for the user.
- 3.3.4 Each employee to whom the manual or a user manual is furnished must keep it current.
- 3.3.5 Each employee must have access to appropriate manuals or parts of manuals when 3.3.6 performing assigned duties.
- 3.3.6 AOC holders are required to carry appropriate parts of the manual on each aircraft when away from the principal base of operations - for use by ground and flight personnel.

3.4 REVIEW OF MANUALS

- 3.4.1 Manuals must be reviewed by inspectors to ensure they contain adequate content and are in compliance with applicable regulations, safe operating practices, and the operator's Op Specs.
- 3.4.2 While inspectors are encouraged to provide guidance and advice to operators in the preparation of their manuals, the development and production of an acceptable manual is solely the responsibility of the operator.

3.4.3 INITIAL REVIEW

- 3.4.3.1 Before the initial certification of an applicant, a comprehensive review of the manuals must be conducted by qualified inspectors.
 - a. During the initial review of the manuals, PRINCIPAL INSPECTORs must ensure that the operator has addressed the applicable manual content.
 - b. In addition, those items in the operator's final conformance checklists which require the operator to develop a policy statement, system, method, or procedure, must be addressed.
 - c. If user manuals are furnished, those topics which apply to the specific user must be addressed.
 - d. Each topic must be presented with enough detail to ensure that the user can properly carry out the portion of the policy or procedure for which the user is responsible.

3.4.3.2 Review of Changes to Manuals.

The assigned inspector should review each revision or proposed revision to a manual. Inspectors should not limit this review to a strict consideration of the change itself but should also consider the impact of the change on the operator's overall manual system, training programme, and type of operation. Changes in the operator's Ops Specs should be accompanied by a review of applicable sections of the operator's manual.

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3.4.4 ENROUTE AND RAMP SURVEILLANCE

- 3.4.4.1 Inspectors conducting en-route and ramp inspections should review the flight manual and those portions of the Ops Manual, Part A carried by the flight crew for completeness and currency.
- 3.4.4.2 When a flight is long enough to make it practical, inspectors should review these manuals more in-depth, particularly those sections that are operationally relevant to the flight in progress.

3.4.5 PERIODIC REVIEW OF MANUALS

- 3.4.5.1 The continual review of an operator's manuals is necessary because both the aviation environment and the operations conducted by the operator are constantly changing.
- a. Each principal inspectors is responsible for developing a surveillance plan for the operator's manual system.
 - b. At least one portion of the operator's general manual should be reviewed annually, and the entire general manual should be reviewed over a period of 1 to 3 years (depending on the complexity of the operation).
 - c. This periodic review should be planned as a distinct event so that every portion of the manual is systematically reviewed at some time over a 1 to 3 year cycle.
 - d. This periodic review should be coordinated between principal inspectors to ensure an appropriate exchange of information and to avoid redundant reviews.

3.5 FORMAT AND STYLE OF MANUALS

- 3.5.1 Each page of a manual must include the most recent revision date. In general, manuals and checklists should be easy to use and understand, and in a format that can be easily revised.
- 3.5.2 When evaluating manuals and checklists for ease of use and understanding, inspectors should consider the following guidance concerning format and style:

3.5.3 FORM

- 3.5.3.1 All or part of a manual may be prepared and maintained in conventional paper format (book form) or in other forms, such as microfilm or computer based storage with electronic image.

3.5.4 PREFACE PAGE

- 3.5.4.1 The first page of a user manual should be a preface page containing a brief statement of the manual's purpose and intended user. The preface page should also contain a statement which emphasizes that the procedures and policies in the user manual are expected to be used by company personnel.

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3.5.5 REVISION CONTROL

3.5.5.1 Each manual should be easy to revise. Also, each manual should contain a revision control page or section from which the user can readily determine whether the manual is current.

- a. This page or section should preferably follow the preface page but it can be organised in any logical manner.
- b. The control date of the most recent revision of each individual page must appear on each page.
- c. Complex operators should establish a bulletin system to bring temporary information or changes which should not be delayed by a formal revision process, to the attention of the user. The bulletin system should have a means of control that includes giving bulletins a limited life and systematically incorporating them into appropriate manuals in a timely manner. Users should be able to easily determine whether they possess all current bulletins.

3.5.6 TABLE OF CONTENTS

3.5.6.1 Each manual should have a table of contents containing lists of major topics with their respective page numbers.

3.5.7 REFERENCE SITES

3.5.7.1 Manuals must include reference sites to specific regulations when appropriate. A reference to regulations or other manual material is appropriate when it is necessary to clarify the intent of the text or when it is useful to the user for looking up specific subject matter. Reference sites should not be made to advisory circulars and to preambles of ANR, as these sources are advisory and not binding in nature.

3.5.7.2 Operators should use caution when adapting the text of advisory documents into their manuals. Advisory text may not translate into a directive context.

3.5.8 DEFINITIONS

3.5.8.1 Significant terms used in manuals should be defined. Any acronym or abbreviation not in common use should also be defined.

3.5.9 ELEMENTS OF STYLE

3.5.9.1 Manuals and checklists should be composed in the style of general technical writing. This style should be clear, concise, and easy to understand. When evaluating manuals, inspectors should be knowledgeable of the following suggestions for accomplishing clarity in technical writing:

- a. Whenever possible, short, common words should be used. Examples of this include: using the words "keep" or "hold" instead of "maintain"; using the word "start" instead of "establish"; and using the word "stop" instead of "terminate."

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- b. When a word has more than one meaning, the most common meaning should be used. For example, the word "observe" should be used to mean "see and take notice of" rather than "obey and comply."
- c. Operators should standardize terminology whenever practical. For example, since the terms "throttles" and "thrust levers" refer to the same item, the operator should choose one term and use it consistently throughout the manual. Once a particular term has been used in a specific sense it should not be used again in another sense.
- d. Terms which command actions should be clearly defined, such as "checked," "set," and "as required." Since auxiliary verbs such as "may" and "should" are ambiguous and can create room for doubt, they should not be used when a definite action is commanded. Instead, verbs such as "shall" and "must" are preferable to use when an action is commanded, because they are more definite.
- e. All "instructions" should be given in the imperative mood and the active voice. For example, "Hold the speed between VREF and VREF plus 10 knots" is preferable to "The speed needs to be held between VREF and VREF plus 10 knots."
- f. To provide appropriate degrees of emphasis on specific points in the text, "cautions," "warnings," and "notes" should be in the operator's manuals and checklists.
- g. Any instruction, particularly a warning or a caution, must begin with a simple directive in the imperative mood that informs the reader precisely what must be done.
- h. To avoid obscuring the directive in the background information, the directive must be stated first and then followed with an explanation.
- i. An example of how a directive can be obscured in background information is as follows: "Warning - To avoid the hazard of striking ground handling personnel with the free end of a swinging tow bar, do not place feet on rudder pedals until the captain takes the salute from the ground handler. The hydraulic nose wheel steering can sling the tow bar with hazardous force." In contrast the following is an example of the preferred method of placing the directive first: "Warning - Do not place feet on rudder pedals until the captain takes the salute from the ground handler. The hydraulic nose wheel steering can sling a tow bar with sufficient force to cause serious injury to ground handling personnel."
- j. Descriptions in the manual should not be overloaded, but should be presented simply and sequentially. An example of an overloaded description is as follows: "A CSD per engine drives the AC generator at a constant speed of 8,000 RPM regardless of the speed of the engine or the load on the generator." The following is an example of a clearer, more concise description: "A CSD is mounted between each engine and generator. The CSD holds the generator speed at a constant 8,000 RPM."

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- k. Long sentences should be avoided in the manual. The following example consists of subject matter put into a long sentence which makes it difficult to understand: "During gear retraction, the door operating bar located on the landing gear leg contacts and turns the latch, withdrawing the roller from the slot as a second roller entraps the door operating bar." The following example consists of the same subject matter used the previous example, however, when it is broken down into shorter sentences, it is easier to understand: "During landing gear retraction, the door operating bar on the landing gear leg is pressed against the door latch. The latch turns, freeing the door roller. The roller moves out of the slot. A second roller then traps and holds the door operating bar."

3.6 ADEQUACY OF PROCEDURES

- 3.6.1 The following general guidance is provided for inspectors to use when evaluating procedures in any manual, including flight manuals:

3.6.2. OBJECTIVE

- 3.6.2.1 The objective of a procedure must be stated clearly unless it is so commonly understood that a statement of the objective is not necessary.

3.6.3 LOGICAL SEQUENCE

- 3.6.3.1 Procedures are to flow in a logical step by step sequence.

- 3.6.3.2 The most effective procedures are usually simple and each contain only the information necessary for accomplishing that procedure.

- 3.6.3.3 Preferably procedures should be described in a sequential step by step format rather than a narrative format.

3.6.4 GENERAL CONSIDERATIONS

- 3.6.4.1 A procedure must be an acceptable method for accomplishing an intended objective.

- 3.6.4.2 The individual responsible for each step of a procedure must be clearly identified.

- 3.6.4.3 The acceptable standards of performance for a procedure are to be stated if those standards are not commonly understood or clearly obvious.

- 3.6.4.4 Since a variety of personnel with differing degrees of expertise are involved in procedures, adequate information concerning the accomplishment of a procedure must be provided for the least experienced individual.

- a. A procedure may be described very briefly and concisely when the user is capable of achieving the objective without extensive direction or detail.
- b. When the user has limited training or experience, however, a procedure must be described in enough detail for the user to correctly accomplish it.

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- c. When the user has limited access to other sources of information and guidance while performing a procedure, enough detail should be provided to make the user independent of other sources of information.

3.6.4.5 When a form, checklist, or tool is necessary to accomplish a procedure, the location of that item must be indicated in the procedure.

3.6.4.6 Enough time should be available under normal circumstances for the user to accomplish a procedure. If sufficient time is not available to the user for accomplishing a procedure, either the procedure itself or the user's duties must be revised.

3.7 APPROVAL AND ACCEPTANCE OF MANUALS AND CHECKLISTS

3.7.1 GENERAL

3.7.1.1 This section contains direction and guidance for inspectors when approving or accepting an operator's manuals and checklists. This process is based on the general process of certification used by the CAASL-FS for approval or acceptance.

3.7.2 THE APPROVAL PROCESS

3.7.2.1 The approval process for a checklist normally consists of phases one, two, three, and five of the general process. It may be necessary, however, for an inspector to require that phase four (the demonstration phase) be included in the approval process.

3.7.3 THE ACCEPTANCE PROCESS

3.7.3.1 The acceptance process for a manual, manual section, or a checklist normally consists of phases one, two, and three of the general process.

3.7.3.2 The operator must submit to the inspector current copies (initial certification) or revisions (subsequent certification) of required manuals, aircraft checklists, etc., for CAASL-FS review.

3.7.3.3 An operator's entire manual system must be reviewed during the document verification phase of initial certification. Once an operator is certified, the operator may revise, distribute, and use accepted material even though the inspector has not completed a review of it. If after review, the inspector determines that portions of the manuals or checklists are unacceptable, the operator must revise the unacceptable portions.

3.7.4 EVALUATION OF MANUALS FOR CAASL-FS ACCEPTANCE OR APPROVAL

3.7.4.1 An operator may develop and publish in its manual any policy, method, procedure, or checklist that the operator finds necessary for the type of operations conducted.

3.7.4.2 These policies, methods, procedures, and checklists, however, must comply with the ANR and be consistent with safe operating practices. Inspectors should encourage operators to be innovative and progressive in developing such policies, methods, procedures, and checklists.

3.7.4.3 The inspectors' role in the review process is to provide an independent and objective evaluation of the operator's manual material. The inspector must ensure that the operator's

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material complies with the ANR, is consistent with safe operating practices, and is based on sound rationale or demonstrated effectiveness.

- 3.7.4.4 The inspector will ensure while reviewing the manuals for acceptance or approvals that the applicant for AOC will have a procedure established to maintain the validity of its manuals at all times

3.7.5 DISCREPANCIES

- 3.7.5.1 When an inspector finds a discrepancy in an operator's existing manual material, the inspector shall take action to have that discrepancy resolved. Usually such discrepancies can be resolved through informal discussions. When informal discussion cannot resolve the discrepancy, however, the inspector is required to formally withdraw CAASL-FS approval or acceptance from the operator.

3.8 PHASE ONE: ESTABLISHING A FRAMEWORK FOR REVIEW

- 3.8.1 The first phase of the approval or acceptance process begins with communication between the CAASL-FS and the operator (either a current AOC holder or an applicant for a AOC). There are three occasions when approval or acceptance of manuals and checklists is required, as follows:

- a. When an applicant applies for a certificate
- b. When an existing operator determines that a change is necessary
- c. When, as a result of an investigation or normal surveillance, the PRINCIPAL INSPECTOR determines that a manual, manual section, or a checklist is inadequate or deficient

3.8.2 DETERMINING BASIC REQUIREMENTS APPLICABLE TO THE OPERATOR

- 3.8.2.1 The primary task of the inspector during phase one is to determine the basic requirements that the operator must meet to obtain acceptance or approval of a manual or checklist. The inspector must communicate these requirements to the operator.

- a. To do this, the inspector should review the appropriate evaluations in this manual or the technical source references in Appendices 1 and 3, Operations Specifications, industry safety practices, and any deviations applicable to subjects the operator must address in its manual or checklist.
- b. Both the inspector and the operator must clearly understand the topics and level of detail the operator is required to have in the material to be submitted during phase two of the process.
- c. During phase one, the inspector should make the following determinations and communicate them to the operator:
 - Whether the submission will involve approval or acceptance
 - Whether there is a need for validation tests or other demonstrations

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- Whether there is a need for supplementary documentation, analysis, or other data to support the submission

3.9 METHODS FOR MANUAL OR CHECKLIST ORGANISATION

3.9.1 During phase one, the inspector should inform the operator that there are various methods that can be used to organize and format those manuals, manual sections, and checklists requiring CAASL approval/acceptance. The inspector may inform the operator of the content of the following subparagraphs, which describe at least four possible methods that an operator may use:

3.9.2 LIMITED CONTENT

3.9.2.1 An operator may choose to limit the content of the manual solely to approved material.

- a. When this method is used, the entire manual must be approved and the operator may not revise the manual without additional review by the inspector.
- b. While this method facilitates CAASL-FS review and acceptance, the manual may be difficult to use because the intended user may have to frequently switch back and forth between the approved checklists and other manuals containing accepted material.
- c. When the operator chooses this method, inspectors must ensure that a header or footer is on each page indicating the material is CAASL-FS approved.

3.9.3 GROUPING MATERIAL

3.9.3.1 An operator may choose to group the CAASL-FS approved material in specified sections of the manual and place accepted material in the remaining sections.

3.9.3.2 With this method, the PRINCIPAL INSPECTOR must ensure that a header or footer is on each page of the approved sections indicating that the material on that page is CAASL-FS approved.

3.9.3.3 The operator may submit the approved and accepted sections to the PRINCIPAL INSPECTOR as separate packages.

3.9.4 INTERSPERSED MATERIAL

3.9.4.1 An operator may choose to intersperse CAASL-FS approved material and accepted material throughout the manual.

3.9.4.2 When an operator chooses this method, the inspector must ensure that the operator has clearly identified approved material each time it appears in the manual.

3.9.4.3 This method of organization allows for efficient manual use, but makes the operator's publication process and the approval process difficult.

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3.9.5 APPROVAL DOCUMENT

3.9.5.1 The operator may choose to place material in an "approval document" solely for the purpose of obtaining CAASL-FS approval of that material.

- a. An approval document is a document and therefore may not be used as a manual.
- b. After the document has been approved, the operator must develop user manuals which incorporate the approved information from the document along with detailed, guidance and supplementary information.
- c. When this method is used, the user manuals are treated as "accepted" material and do not have to be individually approved.
- d. The inspector must, however, review the user manuals to ensure that the information in them is consistent with the approval document.
- e. When using this method, the operator may revise the information in user manuals without prior CAASL-FS approval, provided the revision is consistent with, and does not conflict with, the information in the approval document.
- f. If the operator or the inspector finds it necessary for the approval document to be revised, the operator must submit the proposed revision for review and approval.
- g. A revision to an approval document must be approved before the operator can incorporate the changed information into the user manuals.
- h. When an operator uses this method for submitting manual or checklist material for CAASL-FS approval, inspectors must ensure that the operator has stated on the first page of the user manuals that the manual contains CAASL-FS approved material.
- i. The manuals or checklists provided to the user, however, do not have to be specifically identified as being CAASL-FS approved ones.

3.9.6 SUBMISSION OF MATERIAL

3.9.6.1 During phase one, the inspector should advise the operator on how to submit the documents, manuals, checklists and subsequent revisions for approval or acceptance.

3.9.6.2 CAASL-FS Approval Submission

- a. For material that requires CAASL-FS approval, the inspector should advise the operator to submit the following—
 - Two copies of the document, manual, manual section, checklist, or revision to be approved; one copy of the printed version of the electronic checklist (as applicable); one copy of a report indicating differences between the proposed and current versions of the electronic checklist (as applicable); or

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- One copy of the document, manual, manual section, checklist, or revision, and two copies of the page control sheets for the material (the page control sheets, must show an appropriate revision number or original page number for each page, and the effective date of each page)
- A copy of any supporting documentation or analysis.

3.9.6.3 CAASL-FS Acceptance Submission

- a. For material that is to be evaluated for acceptance by the CAASL-FS, the inspector should advise the operator to submit the following:
 - A copy of the manual, manual section, checklist, or revision to be reviewed
 - A copy of the page control sheets for the material to be reviewed, when appropriate

3.9.6.4 Coordination of Submitted Documents

- a. Inspectors should encourage operators to coordinate drafts of manuals and checklists and revisions before making a formal submission.
 - Mutual agreement on major points should be reached between the operator and the inspector before the material is put in final form.
 - Operators should be advised by the inspectors not to publish or distribute material requiring CAASL-FS approval until after they have received written notification that the material has been approved.
 - An operator who prepares and distributes such material before receiving approval may have to make costly changes.
 - The inspector should encourage the operator to establish methods which streamline and simplify the process for both the operator and the CAASL-FS.

3.10 PHASE TWO: PRELIMINARY REVIEW

3.10.1 Phase two [Initial Application Review] consists of the qualified inspector conducting a preliminary review (as opposed to a detailed analysis) of the operator's submission. This preliminary review is intended to ensure that the operator's submission is clear and contains all required documentation.

3.10.2 The phase two review should be conducted promptly after receipt of the operator's submission. If after preliminary review, the submission appears to be complete and of acceptable quality, or if the deficiencies are immediately brought to the operator's attention and can be quickly resolved, the inspector may begin the phase three in-depth review.

3.10.3 If the submission is incomplete or obviously un-approvable or unacceptable, the process is terminated and the inspector must immediately return the submission (preferably within 15

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working days) with an explanation of the deficiencies. Inspectors should return the submission to the operator promptly so that the operator will not erroneously assume that the inspector is continuing the process to the next phase.

3.11 PHASE THREE: IN-DEPTH REVIEW

3.11.1 Phase three [document verification] is a detailed analysis of the operator's submission.

3.11.2 During this phase, a qualified inspector must review the operator's submission in detail to determine that the submission is complete and technically correct.

3.11.3 The time to complete phase three depends on the scope and complexity of the submission. During the phase two initial review, the inspector should determine whether the review can be completed within 15 working days.

3.11.4 If any part of the submission requires CAASL-FS approval, and the inspector determines that it will take longer than 30 working days to complete the review and approval process, the inspector shall give the operator an estimate of the time it should take to complete the process.

3.11.5 The phase three review and analysis should confirm that the operator's submission conforms to, or is consistent with, the following:

- a. Air Navigation Regulations (ANR)
- b. Criteria and guidance in this manual and the technical sources references
- c. The operator's operations specifications (Ops Specs)
- d. Criteria and guidance regarding acceptable methods of conformance
- e. Applicable aircraft flight manuals, manufacturer's operating bulletins, and airworthiness directives
- f. Safe operating procedures
- g. The operator's cockpit resource management policies
- h. State of the Manufacture or Design training Recommendations

3.11.6 The direction and guidance in this chapter for reviewing procedures and checklists have been developed after consultation with knowledgeable and experienced personnel in the air transportation industry, aircraft manufacturers, and the CAASL-FS. The information presented is considered to be the best guidance currently available on the topic. Inspectors should realize, however, that circumstances vary widely.

3.11.7 The best set of procedures for one circumstance may not work well in another circumstance. Two recommendations may be in conflict. In such cases, the appropriate resolution must be achieved through compromise. For example, it may be more important for an operator's checklist and procedures design policies to be internally consistent than for an individual procedure to be designed in a specific way.

3.11.8 The inspector should thoroughly consider the operator's experience and history when evaluating procedures and checklists. When an operator has a history of successful operations,

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the inspector should normally approve submissions consistent with the operator's existing procedures. When an operator has an incident or accident attributable to crew error, the inspector must thoroughly examine the basic assumptions and policies in the design of the operator's checklists and operating procedures.

- 3.11.9 Review of electronic checklist modifications in applications with the ability to automatically detect the completion of an action shall include verification that this detection is based on monitored conditions that are consistent with the objective of the action (for example, a checklist action item for LANDING GEAR... DOWN would show complete on the sensing of the gear handle being down and the gear indication being down). The review and verification should be accomplished using a paper copy of the electronic checklist annotated with the monitored condition for each action whose completion is automatically detected.

3.12 PHASE FOUR: VALIDATION TESTS

- 3.12.1 Operators should be encouraged by inspectors to conduct validation tests of operating procedures and checklists during the development process.
- 3.12.2 These validation tests should be conducted before the operator submits the proposed procedures and checklists for CAASL-FS review and approval. Whenever possible, the inspector or a qualified inspector should observe these tests.
- 3.12.3 Under certain circumstances a validation test may have to be conducted after the phase three in-depth review. In other circumstances, especially for minor types of revisions or be warranted or appropriate.
- 3.12.4 Before approving operating procedures and checklists, inspectors should consider the following guidance concerning validation tests.
- 3.12.4.1 Aircraft operating procedures and checklists should be tested in realistic real time scenarios, with a full crew complement.
- 3.12.4.2 Validation tests of normal procedures may be conducted in a simulator, in a training device, on training flights, or in conjunction with proving tests.
- 3.12.4.3 Validation tests of non-normal, abnormal, and emergency procedures or checklists should be conducted in a simulator or training device. Tests of non-normal and emergency procedures and checklists may be conducted in an aircraft, however, the operator must ensure that the test can be conducted safely. Testing of non-normal and emergency procedures and checklists shall not be conducted during revenue service.
- 3.12.4.4 Operators may submit evidence that a qualified party (such as the manufacturer or another operator) has already conducted a validation test of a procedure or checklist. When such evidence is available, the inspector should not require a validation test unless the operator's circumstances are significantly different from those in which the original tests were conducted.
- 3.12.4.5 Changes in the wording of a procedure may not actually change the procedure. In such cases, validation tests are not necessary.

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- 3.12.4.6 Principal inspectors shall require that operators validate the safety and effectiveness of any addition, deletion, or change of sequence in the steps of a non-normal or emergency checklist, through validation testing.
- 3.12.4.7 For those operators who intend to convert immediate action items to or from challenge do verify items on an emergency checklist, Principal inspectors shall require that they test the modified procedure to ensure that it is safe, effective, and has no adverse effects.
- 3.12.4.8 The addition or deletion of individual items to a normal phase checklist does not usually need to be validated by a test. If the principal inspector is of the opinion that the change significantly alters crewmember assignments or workload distribution, the principal inspector shall require a validation test.
- 3.12.5 While electronic checklists must comply with the same guidelines discussed here, modification to an existing electronic checklist does not in itself require a validation test if the principal inspector deems the modification to be minor.

3.13 PHASE FIVE: GRANTING CAASL-FS APPROVAL

- 3.13.1 Phase five consists of the principal inspector granting CAASL-FS approval to manuals, manual sections, and checklists. During this phase the principal inspector must formally notify the operator of the approval and also complete a specific record of the approval.

3.13.2 NOTIFICATION OF APPROVAL

- 3.13.2.1 When the principal inspector decides to approve a document, manual, manual section, or checklist, the following procedures apply:
- For a document, manual, or checklist that contains page control sheets, the principal inspector shall annotate both copies of the page control sheets with the phrase "CAASL Approved." Under the words "CAASL Approved," principal inspectors shall enter the effective date of approval and sign both copies. In the absence of a control page the principal inspector may use a stamp to add the approval annotation on each sheet.
 - For manuals, manual sections, or checklists that do not contain page control sheets, the approval annotation must be placed by the principal inspector on each page of the material. In this case the approval annotation must be made on two copies of the material. The annotation shall be the same as discussed in previous paragraph. This procedure should be used only for very short manuals, manual sections, or checklists (usually fewer than 5 pages) or when the use of page control sheets are not practical or serve little purpose.
 - When page control sheets are used, the principal inspector shall return one copy of the annotated page control sheets to the operator. In the remaining cases one copy of the approved material must be returned to the operator with a notification letter which states that the material is approved. This letter should also contain a statement advising the operator to maintain for its records the signed page control sheets or the material with the approval annotation. The principal inspector shall retain the second copy of the signed page control sheets or the annotated material in the CAASL-FS files.

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- d. When electronic checklists are submitted for approval, the operator will prepare a release/cover sheet for the printed version of the electronic checklist. The release/cover sheet will contain the pre-printed words and lines as discussed in previous paragraph. The principal inspector's annotation shall also be the same.

3.13.3 NOTIFICATION OF DISAPPROVAL

- 3.13.3.1 The coordination, revision, and editing activities that take place throughout all phases of the process should eventually result in approved products.
- 3.13.3.2 Under certain circumstances, however, it may be appropriate for the principal inspector to terminate the process. For example, the operator may not take any action on the material for 30 days.
- 3.13.3.3 To terminate the approval process, the principal inspector shall return the entire submission to the operator with a letter which states that the CAASL-FS is unable to grant approval, along with the reasons why it cannot be granted.

3.13.4 CAASL-FS OFFICE RECORDS

- 3.13.4.1 The principal inspector shall maintain a record of approval for each operator submitted document, manual, manual section, and checklist.
- 3.13.4.2 Records of approval to revisions of this material must also be maintained. The records should consist of page control sheets (or approved material if page control sheets are not used), notification letters, and any other related correspondence.
- 3.13.4.3 While superseded portions of documents, manuals, or checklists do not have to be retained, principal inspectors may retain this type of material if they determine that it is appropriate.
- 3.13.4.4 The principal inspector should include with the material in the operator's file a brief memorandum containing the reasons for retaining the material.

3.13.5 NOTIFICATION OF DEFICIENCIES

- 3.13.5.1 When any portion of approved material that is currently in use is found to be deficient, the principal inspector shall notify the operator and request prompt action to resolve the deficiency. Deficiencies can usually be resolved through an informal process; however, when this cannot be done, the principal inspector must formally notify the operator by letter that the deficiency must be corrected.
- 3.13.5.2 **Deficiency Involves CAASL-FS Approved Material**
 - a. If the deficiency involves CAASL-FS approved material, the letter must contain a clear statement that CAASL-FS approval of the material will be withdrawn as of a specific date if corrective action is not taken.

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- b. The letter should also contain a statement that the material does require CAASL-FS approval and that after the specified date, any operations without that approval will be in violation of the ANR.

3.13.5.3 Deficiency Involves Operator Developed Material

- a. If the deficiency involves operator developed material that is accepted by the CAASL-FS, the letter should clearly indicate the material that is deficient and the reasons why it is deficient.
- b. If, after such notification, the operator still fails to take appropriate corrective action, the principal inspector should attempt to negotiate a reasonable solution.
- c. When these attempts fail, the principal inspector may, with the FS Director's approval, amend the operator's Operations Specifications to withdraw the authorization for conducting the operations affected by the deficiency.

3.13.6 EMERGENCY REVISIONS

3.13.6.1 For safety reasons, an operator may sometimes find it necessary to immediately revise CAASLFS approved material before there is an opportunity to coordinate the revision with the principal inspector.

3.13.6.2 In such cases, the operator should take action as necessary to make the revision effective (such as alert bulletins and dispatch messages).

- a. For example, an operator may become aware of a deficiency after business hours, on a weekend, or on a holiday. In such cases, the operator should take immediate action.

3.13.6.3 When emergency revisions to CAASL-FS approved material are made, the operator shall notify the PRINCIPAL INSPECTOR of the revision at the earliest practical opportunity (first working day after the action).

3.13.6.4 Because there are a wide variety of reasons that an emergency revision action may be necessary, the principal inspector must determine the best course of action to be taken after being notified of the emergency revision. Principal inspectors shall make assigned operators aware of this guidance.

3.13.6.5 The Holder of an AOC shall amend or revise all the manuals as necessary to ensure that the information contained therein is kept up to date pertaining to Flight Operations.



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Chapter 4 - FLIGHT DECK EN-ROUTE INSPECTION

4.1 FLIGHT DECK EN-ROUTE INSPECTIONS AREAS

- 4.1.1 Inspectors should consider all inspection areas, both internal and external to the AOC holder, to be of equal importance. Four general inspection areas have been identified for observation and evaluation by inspectors during en-route inspections.
- 4.1.2 The "crewmember" inspection area applies to both flight crewmembers and cabin crewmembers. Inspectors should evaluate such items as crewmember knowledge, ability, and proficiency by directly observing crewmembers performing their respective duties and functions. The checklist contains a list of reminder items that should be observed in the crewmember inspection area. These items are not all-inclusive but represent the types of items inspectors should evaluate during a flight deck en-route inspection.
- 4.1.3 The "flight conduct" inspection area relates to 10 specific phases of flight that can be observed during an en-route inspection. The checklist contains a list of the items that should be evaluated by inspectors during these phases of flight. These items are not all-inclusive and in some cases (such as "power-back") may not be applicable to the flight conducted. Inspectors are, however, encouraged to observe, evaluate, and report on as many of these items as possible.
- 4.1.4 The "airport/heliport" inspection area pertains to the various elements of airports or heliports that are passed through during the flight such as runways, taxiways, ramps, and aircraft ground movements. Inspectors should observe and evaluate as many of these elements as possible during an en-route inspection.
- 4.1.5 The "ATC/airspace" inspection area pertains to the various elements of Air Traffic Control and national or international airspace systems. These elements should be observed and evaluated by inspectors during en-route inspections. From an operational standpoint, these evaluations are a valuable information source which can be used not only to enhance safety with respect to air traffic control and the airspace system, but also to enhance the effectiveness of en-route and terminal facilities and procedures.
- 4.1.6 Although these four general inspection areas cover a wide range of items, they are not the only areas that can be observed and evaluated during flight deck en-route inspections. Inspectors may have the opportunity to evaluate many other areas, such as line station operations, flight control procedures, and cabin crews in the performance of their duties. These types of inspection areas can often be observed before a flight begins, at en-route stops, or at the termination of a flight.
- 4.1.7 Elements of the aviation system which are internal to the AOC holder and that can be observed during en-route inspections, are items such as the following:
- a. Crewmembers
 - b. AOC holder manuals and checklists
 - c. Use of MELs and CDLs

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- d. Operational control functions (dispatch, flight following, flight locating)
- e. Use of checklists, approved procedures, and safe operating practices
- f. Crew coordination/flight deck resource management
- g. Cabin safety
- h. Aircraft condition and servicing
- i. Training programme effectiveness

4.1.8 Elements of the aviation system which are external to the AOC holder and that can be observed during en-route inspections, are items such as the following:

- a. Airport/heliport surface areas
- b. Ramp/gate activities
- c. Airport construction and condition
- d. Aircraft movements
- e. ATC and airway facilities
- f. ATC and airspace procedures
- g. IAPs, SIDs, and STARs
- h. Navigational aids
- i. Communications

4.1.9 A Flight Operations Inspection is the inspection and surveillance of an aircraft and its technical crew on a revenue-earning line operation conducted according to normal company procedures. The purpose of this inspection is to ensure that operations are conducted in accordance with regulatory requirements and to assess:

- a. The operational effectiveness of the operating crew
- b. The effectiveness of company procedures
- c. The effectiveness of other interrelated systems and procedures — for example, airspace, ATC, FAC, etc.

4.2 EN-ROUTE INSPECTION: GENERAL

4.2.1 BEGINNING THE INSPECTION.

4.2.1.1 The Inspector should—

- a. Display an ID card and issue a CAASL-FS authorization form.
- b. Introduce yourself to the aircraft captain, stating your name and the purpose of the inspection.
- c. Occupy an observer's seat on the flight deck or, when the aircraft requires a single pilot, the vacant control seat.

4.2.2 CONDUCTING THE INSPECTION

4.2.2.1 The inspector should carry out the inspection on a non-interference basis, using the proper checklist.

- a. Do not distract the crew from their primary task of operating the aircraft

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- b. Be familiar with the relevant section of the AOC holder's Operations Manual concerning the carriage of staff in the jump seat
- c. Be aware of any sterile flight deck provisions
- d. Monitor the radio and be aware of the need for checklist calls, when conversing with the crew
- e. Regard the crew as a sample product of the AOC holder's training and checking organization
- f. Regard the aircraft airworthiness status as a sample product of the AOC holder's maintenance planning and control organization.

4.2.2.2 The inspector should not intervene in the conduct of the flight unless he or she is of the opinion that failing to intervene would jeopardize the safety of the aircraft. The inspector must alert the crew to a condition that they have failed to note which may result in an unsafe situation, compromise compliance with the regulations or aircraft structural limitations.

4.2.3 CONCLUDING THE INSPECTION

4.2.3.1 at the conclusion of the inspection—

- a. *Do not debrief the crew on the results of the inspection*, unless you have an immediate safety of flight issue, such as an aircraft unable or unsafe to fly or questions concerning crew competency to operate safely. These types of situations are rare.
- b. Complete the appropriate checklist and notes.
- c. Complete the safety issue resolution form(s); and
- d. Make the necessary notifications for safety issue resolution with the affected post holders.

4.2.4 NOT QUALIFIED ON AIRCRAFT

4.2.4.1 If the inspector is not pilot-qualified on the aircraft, it is not necessary to do any debriefing. A simple *“thank you for the flight”* is an acceptable verbiage for departing the aircraft.

4.2.5 NO DEBRIEFING ISSUES

4.2.5.1 If the inspector is pilot-qualified and has no debriefing issues, the proper phraseology to use is *“I have no de-briefing items, thank you for a safe flight.”*

4.2.6 PROPER APPROACH TO DEBRIEFING ISSUES

4.2.6.1 If the inspector, regardless of technical qualification, believes that it is necessary to cover any debriefing issues with the flight crew, it is better to use a non-confrontation approach. The best method is to ask a clarifying question to discuss the issues and give the crew members the opportunity to explain. For example, where the flight crew failed to make a takeoff profile callout, a question, such as *“Is the 80 knot callout and crosscheck still a company takeoff callout?”* This brings the issue to their attention, but is not accusatory.

4.2.6.2 The next step is crucial. After their explanation, politely close the discussion with the words, *“Thank you for your explanation.”* Do not engage in further discussion or attempt to correct

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any apparent misconceptions. You should at this point have the necessary information to discuss this issue with the appropriate company post holder.

4.3 EN-ROUTE INSPECTIONS: LIMIT ON THE NUMBER OF INSPECTORS

- 4.3.1 As a general guideline, only one inspector should conduct a flight deck en route inspection of a given aircraft on a particular flight unless special circumstances exist.
- 4.3.2 Except for the conduct of demonstration flights, the only time two Inspectors would occupy the flight deck at the same time is during inspector training. This requires company consent. There may be occasions when one Inspector conducts a flight deck inspection while another conducts a cabin safety inspection, or, on a large aircraft, more than one inspector may be in the cabin to observe different components. These situations should be infrequent once an AOC holder has achieved a satisfactory standard of operations.

4.4 PREPARATION FOR EN-ROUTE INSPECTION

4.4.1 COMPANY OPERATING PROCEDURES

- 4.4.1.1 Before conducting en-route inspections, it is important that inspectors become familiar with the operating procedures and facilities used by the AOC holder.
- 4.4.1.2 Inspectors can obtain such familiarization by reviewing pertinent sections of the AOC holder's manuals and by asking questions of, and obtaining briefings from, the FOI or other inspectors who are acquainted with the AOC holder's procedures and facilities.
- 4.4.1.3 The inspector is encouraged to comment on any procedure believed to be deficient or unsafe in the inspection report.
- 4.4.1.4 However, the inspector must use good judgment when debriefing crewmembers about procedures that may be specifically approved for that AOC holder.

4.4.2 SCHEDULING THE JUMPSEAT

- 4.4.2.1 The AOC holder is to ensure that there are established procedures to be used by inspectors for scheduling the observer's seat (jump seat).
- 4.4.2.2 These procedures allow inspectors to have free, uninterrupted access to the jump seat. Inspectors should, however, make jump seat arrangements as far in advance as possible. Since inspectors may have sudden changes in schedule, and may not always be able to provide the appropriate advance notice, the AOC holder's procedures are flexible and permit use of an available jump seat on short notice.
- 4.4.2.3 Whenever possible, inspectors should plan flight deck en-route inspections in a manner that will avoid disruption of AOC holder scheduled line checks and line flying under supervision flights. Should an inspector arrive for a flight and find a line check or line flying under supervision in progress, the inspector must determine whether or not it is essential that the flight deck en-route inspection be conducted on that flight. If it is essential, the AOC holder must be so advised by the inspector and must make the jump seat available to the inspector. If the flight deck en-route inspection can be rescheduled and the objectives of the inspection can

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still be met, the inspector should make arrangements to conduct the inspection on another flight.

4.4.2.4 When a required check ride is being conducted by a training captain from the forward jump seat and the en-route inspection is essential, the inspector should occupy the second jump seat, if one exists. On line flying under supervision flights, the training captain should normally occupy one of the pilot seats and the inspector should occupy the forward jump seat. When it is essential that the en-route inspection be conducted on an aircraft that does not have two jump seats, the training captain must occupy a pilot seat and the inspector should occupy the jump seat. In such a case, the flight crewmember not being checked must either be seated in the cabin or not accompany the flight.

4.4.3 AMPLIFIED INSPECTOR REPORTING INSTRUCTIONS

4.4.3.1 An inspector should begin a flight deck en-route inspection a reasonable amount of time before the flight (approximately 1 hour) by reporting at the operations area or at the gate. There the inspector must first complete the necessary jump seat paperwork for inclusion in the AOC holder's passenger manifest and weight and balance documents. The flight crew should then be located by the inspector.

4.4.3.2 After the inspector gives a personal introduction to the flight crew which includes presentation of CAASL-FS authorization, the inspector must inform the PIC of the intention to conduct an en-route inspection.

4.4.3.3 The inspector should then request that, at a time convenient for the flight crew, the flight crew present both their airman and medical certificates to the inspector for examination. Also, the inspector should request that, at a convenient time, the flight crew present flight information such as weather documents, NOTAMs, planned route of flight, dispatch or flight release documents, and other documents with information about the airworthiness of the aircraft to the inspector for examination.

4.4.4 LATE BOARDING SITUATIONS

4.4.4.1 Sometimes an inspector cannot meet and inform the PIC of the intention to conduct an en-route inspection before boarding the aircraft.

4.4.4.2 In such a case, when boarding the aircraft, the inspector should make appropriate introductions, present CAASL-FS Authorization for the PIC's inspection at the earliest convenient opportunity, and inform the flight crew of an intention to conduct a flight deck inspection.

4.4.4.3 In this situation a cabin crew member will usually be at the main cabin entrance door. One of the cabin crew's primary duties is to ensure that only authorized persons enter the aircraft such as ticketed passengers, caterers, and authorized company personnel.

4.4.4.4 Therefore, an inspector should be prepared to present CAASL-FS Authorization and any applicable jump seat paperwork to the cabin crew as identification before entering the flight deck.

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- 4.4.4.5 When boarding the aircraft, an inspector should also avoid unnecessarily impeding passenger flow or interrupting cabin crews during the performance of their duties. Also, during this time an inspector usually has ample opportunity to observe and evaluate the AOC holder's carry-on baggage procedures and the gate agent's or cabin crew's actions concerning oversized items.

Once inside the flight deck, the inspector should request an inspection of each flight crewmembers airman and medical certificates, if not previously accomplished. When the flight crew has completed reviewing the aircraft logbooks (or equivalent documents), the inspector should inspect the logbooks to determine the airworthiness status of the aircraft.

4.4.5 INFLIGHT

- 4.4.5.1 The inspector should wear a headset during the flight. During flight deck en-route inspections, inspectors must try to avoid diverting the attention of flight crewmembers performing their duties during "critical phases of flight."

- 4.4.5.2 Inspectors must be alert and point out to the flight crew any apparent hazards such as conflicting traffic.

- 4.4.5.3 If during an en-route inspection, an inspector becomes aware of a potential violation or that the flight crew is violating a regulation or an ATC clearance, the inspector must immediately inform the PIC of the situation.

4.4.6 CHECKLIST

- 4.4.6.1 Inspectors should use the Flight deck En-route Inspection checklist (see Checklist OP-001) while conducting these inspections.

- 4.4.6.2 This checklist contains a list of reminder items for the specific inspection areas that should be observed and evaluated. Items may be evaluated during an en-route inspection which is not listed in the check list.

- 4.4.6.3 For such items, inspectors should use the remarks section to record these comments and notes during the inspection which can later be transferred to a Safety Issue Resolution Report.

4.5 SPECIFIC FLIGHT DECK CONDUCT

- 4.5.1.1 Once situated in the flight deck, the inspector should check the jump seat oxygen and emergency equipment (if applicable) and connect the headset to the appropriate interphone system. The PIC or a designated crewmember should offer to give the inspector a safety briefing. If the PIC does not make such an offer, the inspector should request a briefing. It is important that the inspector monitor all radio frequencies being used by the flight crew to properly value ATC procedures, flight crew compliance, transmission clarity, and radio phraseology. The monitoring of these frequencies also ensures that the inspector does not inadvertently interfere with any flight crew communications. Inspectors should continuously monitor these frequencies to remain aware of the progress of the flight.

- 4.5.1.2 Inspectors should observe and evaluate the crew during each phase of flight. This should include an evaluation of crewmember adherence to approved procedures and a proper use of all checklists. The inspector should also observe the PIC's crew management techniques, delegation of duties, and overall conduct. All crewmembers must follow sterile flight deck

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procedures. Some of the areas that should be observed and evaluated during each flight phase are as follows:

4.5.2 PREFLIGHT

4.5.2.1 Inspectors should determine that the flight crew has all the necessary flight information including the appropriate weather, dispatch, or flight release information; flight plan; NOTAMs; and weight and balance information.

4.5.2.2 MEL items should be resolved in accordance with the AOC holder's MEL and appropriate maintenance procedures. Inspectors should observe the flight crew performing appropriate exterior and interior pre-flight duties in accordance with the AOC holder's procedures.

4.5.3 PREDEPARTURE

4.5.3.1 Inspectors should observe the flight crew accomplishing all pre-departure checklists, take-off performance calculations, and required ATC communications. The flight crew should use coordinated communications (via hand signals or the aircraft interphone) with ground personnel. Often pushback clearance must be obtained from the appropriate ATC or ramp control facility. When weight and balance information is transmitted to the aircraft by company radio during the outbound taxi, the flight crew should follow the AOC holder's procedures as to which crewmember receives the information and completes the final takeoff performance calculations and which crewmember monitors the ATC frequency. The inspector should observe the following:

- a. Accomplishment of checklists during taxi
- b. Adherence to taxi clearances
- c. Control of taxi speed
- d. Compliance with hold lines
- e. Flight crew conduct of a pre-takeoff briefing in accordance with the AOC holder's procedures.

4.5.4 FOI EVALUATION: TAKEOFF

4.5.4.1 The takeoff procedure should be accomplished as outlined in the AOC holder's approved manoeuvres and procedures document.

- a. Inspectors should observe and evaluate the following items or activities during the takeoff phase:
- b. Aircraft centreline alignment
- c. Use of crosswind control techniques
- d. Application of power to all engines
- e. Takeoff power settings
- f. Flight crew callouts and coordination
- g. Adherence to appropriate takeoff or V speeds
- h. Rate and degree of initial rotation
- i. Use of flight director, autopilot, and auto throttles
- j. Gear and flap retraction schedules and limiting airspeeds
- k. Compliance with the ATC departure clearance or with the appropriate published departure

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4.5.5 FOI EVALUATION: CLIMB

4.5.5.1 The climb procedure should be conducted according to the outline in the AOC holder's approved manoeuvres and procedures document. Inspectors should observe and evaluate the following items and activities during the climb phase of flight:

- a. Climb profile/area departure
- b. Airspeed control
- c. Navigational tracking/heading control
- d. Power plant control
- e. Use, of radar, if applicable
- f. Use of auto flight systems
- g. Pressurization procedures, if applicable
- h. Sterile flight deck procedures
- i. Vigilance
- j. Compliance with ATC clearances and instructions
- k. After takeoff checklist

4.5.6 FOI EVALUATION: CRUISE

4.5.6.1 Procedures used during cruise flight should conform to the AOC holder's procedures. Inspectors should observe and evaluate the following areas during the cruise phase of flight:

- a. Cruise Mach/airspeed control
- b. Navigational tracking/heading control
- c. Use of radar, if applicable
- d. Use of turbulence procedures, if applicable
- e. Monitoring fuel used compared to fuel planning
- F. Awareness of Mach buffet and maximum performance ceilings
- g. Coordination with cabin crew
- h. Compliance with oxygen requirements, if applicable
- i. Vigilance
- j. Compliance with ATC clearances and instructions

4.5.7 FOI EVALUATION: DESCENT

4.5.7.1 Procedures used during descents should conform to the AOC holder's procedures. Inspectors should observe and evaluate the following areas during the descent phase of flight:

- a. Descent planning
- b. Crossing restriction requirements
- c. Navigational tracking/heading control
- d. Use of radar, if applicable
- e. Awareness of Vmo/Mmo speeds and other speed restrictions
- f. Compliance with ATC clearance and instructions
- g. Use of auto flight systems
- h. Pressurization control, if applicable
- i. Area/situational awareness
- j. Altimeter settings

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- k. Briefings, as appropriate
- l. Coordination with cabin crew
- m. Sterile flight deck procedures
- n. Completion of appropriate checklist
- o. Vigilance

4.5.8 FOI EVALUATION: APPROACH

4.5.8.1 Procedures used during the selected approach (instrument or visual) should be accomplished as outlined in the AOC holder's manoeuvres and procedures document. Inspectors should observe and evaluate the following areas during the approach phase of flight:

- a. Approach checklists
- b. Approach briefings, as appropriate
- c. Compliance with ATC clearances and instructions
- d. Navigational tracking/heading and pitch control
- e. Airspeed control, VREF speeds
- f. Flap and gear configuration schedule
- g. Use of flight director, autopilot, auto throttles
- h. Compliance with approach procedure
- i. Sink rates
- j. Stabilized approach in the full landing configuration
- k. Flight crew callouts and coordination
- l. Transition to visual segment, if applicable

4.5.9 FOI EVALUATION: LANDING

4.5.9.1 Procedures used during the landing manoeuvre should conform to those outlined in the AOC holder's manoeuvres and procedures document. Inspectors should observe and evaluate the following areas during the landing phase of flight:

- a. Before landing checklist
- b. Threshold crossing height (TCH)
- c. Aircraft centreline alignment
- d. Use of crosswind control techniques
- e. Sink rates to touchdown
- f. Engine spool up considerations
- g. Touchdown and rollout
- h. Thrust reversing and speed brake procedures
- i. Use of auto brakes, if applicable
- j. Braking techniques
- k. Diverting attention inside the flight deck while still on the runway
- l. After landing checklist

4.5.10 ALL INSPECTORS: PRE-ARRIVAL

4.5.10.1 Pre-arrival and parking procedures should conform to the AOC holder's procedures as outlined in the appropriate manual. Inspectors should evaluate crew accomplishment of after landing checklists, ground crew parking, and passenger deplaning procedures.

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4.5.11 ALL INSPECTORS: ARRIVAL

- 4.5.11.1 Inspectors should observe and evaluate the flight crew complete post flight duties such as post flight checks, aircraft logbook entries, and flight trip paperwork completion and disposition.

4.5.12 OTHER INSPECTION AREAS

- 4.5.12.1 During the en-route inspection, inspectors should observe and evaluate other inspection areas, such as ATC and airspace procedures and airports or heliports the flight transits during the flight deck en-route inspection.

- 4.5.12.2 When evaluating airports or heliports, inspectors should observe the condition of surface areas, such as ramp and gate areas, runways, and taxiways. The following list contains other areas which may be observed and evaluated by inspectors during flight deck en-route inspections:

- a. Taxiway signs, markers, sterile areas, and hold lines
- b. Ramp vehicles, equipment, movement control
- c. Aircraft servicing, parking, and operations
- d. Obstructions, construction, and surface contaminants (such as ice, slush, snow, fuel spills, rubber deposits)
- e. Snow control, if applicable
- f. Security and public safety

- 4.5.12.3 During flight deck en-route inspections, inspectors have the opportunity to observe and evaluate ATC operations and airspace procedures from the vantage point of the aircraft flight deck. Inspectors may observe and evaluate the following areas from the flight deck:

- a. Radio frequency congestion, overlap, or blackout areas
- b. Controller phraseology, clarity, and transmission rate
- c. ATIS
- d. Use of full call signs
- e. Simultaneous runway use operations
- f. Clearance deliveries
- g. Acceptable and safe clearances
- h. Aircraft separation standards
- i. Acceptability of instrument approach procedures, departure procedures, and feeder routings



APPENDIX 4A



Form No. CAA/OP/060

Civil Aviation Authority Sri Lanka Air Operator Flight Deck En Route Inspection Report

Date:	Operator:		
Route:	Flight No:	Aircraft Type:	Registration No:
Captain:	Licence No:	First Officer:	Licence No:
Other Flight Crew:	Cabin Crew In-Charge:	Inspector:	

S=Satisfactory; U=Unsatisfactory; N/O =Not Observed; N/A =Not Applicable

A. CREWMEMBERS		3. Taxi		7. Descent	
1. Licenses		- Observance of Taxiway -----		- Planning -----	
2. Knowledge		- Signs and Markings -----		- Crossing Restrictions -----	
- AFM -----		- Cockpit Setup/Checklist -----		- Navigational Tracking /Heading Control -----	
- FOM -----		- Pre-takeoff Briefing -----		- Radar -----	
- Civil Aviation Regulations ---		- Awareness/Vigilance -----		- Speed Awareness -----	
- MEL/CDL -----				- ATC Compliance -----	
- Checklists/ Bomb Search -----				- FD/AP/AT/FMS -----	
3. Proficiency		4. Takeoff		- Pressurization Control -----	
4. Situational Awareness		- Alignment -----		- Altimeter Settings -----	
5. Conformity		- Power Application -----		- Briefings -----	
6. Manuals		- Power Setting -----		- Coordination with Cabin -----	
- Available -----		- Crosswind Control -----		- Sterile Cockpit -----	
- Current -----		- Callouts/Coordination -----		- Checklist -----	
7. Coordination with Crew (Flight/Cabin)		- V Speeds -----		- Vigilance -----	
8. Use of Checklists		- Rotation -----			
9. Required Equipment		- FD/AP/AT/FMS -----		8. Approach	
- Flash Light -----		- Gear/Flap retraction -----		- Briefing -----	
- Spectacles -----		- Radar/Weather Avoidance ---		- ATC Compliance -----	
B. FLIGHT CONDUCT				- Navigation -----	
1. Pre Flight		5. Climb		- Airspeed/Vref Control -----	
- Flight Plan -----		- ATC Compliance -----		- Gear and Flap Extension -----	
- Dispatch Release -----		- Climb Profile -----		- FD/AP/AT/FMS -----	
- Weather/Volcanic Ash reporting		- Airspeed/Mach Control -----		- Approach Procedure -----	
- NOTAMS -----		- Navigation -----		- Sink rates -----	
- Load Information -----		- Power Plant Control -----		- Stabilized Approach -----	
- MEL Items -----		- Radar/Weather Avoidance ---		- Callouts/Coordination -----	
- Exterior and Interior -----		- FD/AP/AT/FMS -----		- Transition to Landing -----	
- Aircraft Inspection -----		- Pressurization Procedures ---			
		- Sterile Cockpit -----		9. Landing	
		- Vigilance -----		- Before Landing Checklist ----	
		6. Cruise		- TCH -----	
		- Mach/Airspeed Control -----			



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Chapter 5 - CABIN EN-ROUTE INSPECTIONS

5.1 CONSIDERATIONS FOR CABIN EN-ROUTE INSPECTIONS

- 5.1.1 Cabin en-route inspections provide the CAASL-FSS with information concerning cabin crew training programmes, operator procedures, and the condition and maintenance of aircraft emergency equipment and furnishings.
- 5.1.2 Follow the guidelines for beginning a flight deck en-route, but—
- 5.1.2.1 Advise the crew that you plan to occupy a spare cabin seat on an opportunity basis.
- 5.1.2.2 Introduce yourself to the senior cabin crew member, stating your name and the purpose of the inspection.
- 5.1.2.3 If a seat is available, remove your ID before proceeding to the specific seat.
- 5.1.2.4 If there is adequate time before boarding request the cabin crew documents for review.
- 5.1.2.5 Otherwise, take the seat and observe the cabin crew action without comment.
- 5.1.3 A general guideline is if passengers have been boarded or are in the process of emplaning or deplaning, you should not act so as to not distract the cabin staff from carrying out their duties.
- 5.1.4 At other times and at your discretion, you may request information or ask individual cabin crew members to locate and/or describe the use of items of safety equipment.
- 5.1.5 Do not delay members of the cabin staff who are required to connect with another flight or cause the aircraft to be delayed as a result of your inspection, unless you believe that essential safety items are not on board.
- 5.1.6 If you have sufficient time when passengers are not on board, before or after the flight, conduct a cabin interior ramp inspection using the appropriate checklist.

5.2 CABIN EN-ROUTE INSPECTION AREAS

- 5.2.1 Three general areas have been identified for inspectors to observe and evaluate during cabin en-route inspections. Each area should be considered to be of equal importance. The three inspection areas are as follows—
- Cabin (Interior).** The interior inspection area applies to the airworthiness of the aircraft cabin and the condition and availability of aircraft cabin emergency equipment and furnishings.
 - Crewmember.** The crewmember inspection area applies to CCMs who perform assigned safety duties during the flight. Inspectors should evaluate such items as crewmember knowledge, ability, and proficiency by directly observing CCMs performing their assigned safety duties and functions.

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- c. **Flight Conduct.** The flight conduct inspection area relates to the specific phases of the flight that can be observed during the cabin en-route inspection. This includes a wide range of items, including CCM and flight crewmember coordination of the performance of duties. These types of areas can often be observed before beginning a flight, at en-route stops, or at the termination of a flight.

5.3 INITIATION AND PLANNING

- 5.3.1 Inspectors conducting cabin en-route inspections should make arrangements for the inspection as far in advance of the flight as possible.
- 5.3.2 Inspectors who have not provided the operator with the appropriate advance notice should not insist on a seat if the flight is full.
- 5.3.3 Inspectors conducting an en-route inspection on aircraft with a flight deck jump seat must occupy that position rather than displace a revenue passenger.
- 5.3.4 AOC holders should not attempt to displace the inspector in favour of a passenger when notification has been provided. However, bumping a revenue passenger should only be done when there is no acceptable, alternative means of accomplishing the inspection. Inspectors are expected to exercise sound judgment in these matters.
 - a. When it is necessary to board a flight at an intermediate stop, the inspector will make every effort to advise the pilot in command (PIC), prior to boarding the flight, that a cabin en-route inspection will be conducted.
 - b. The inspector must conform to the operator's approved carry-on baggage programme. If there is any concern that the inspector's carry-on baggage will exceed operator limitations, the baggage should be checked.

5.4 PERFORMING THE CABIN EN-ROUTE INSPECTION

- 5.4.1 The attention of the CCMs must not be diverted from assigned duties including passenger boarding, deplaning, and in-flight service. Surveillance of CCM awareness and the following of safety related procedures should continue during the flight.

5.4.2 INTERIOR INSPECTION

- 5.4.2.1 This inspection should be performed without disturbing the boarding or deplaning of the passengers. Any discrepancies noted should be brought immediately to the attention of the lead CCM or the PIC.
- 5.4.2.2 Crewmembers should initially be briefed to continue their assigned duties as if the inspector were not present. The inspector should then request that a crewmember provide an CCM manual and be available for a discussion relating to the crewmember's duties, at the crewmember's earliest convenience.



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5.4.2.3 Some operators require CCMs to accomplish a pre-flight inspection of at least some of the emergency and safety equipment in the cabin. In such a case, the inspector should observe the FA inspect the equipment and then perform an additional inspection of selected equipment.

5.4.2.4 When a CCM pre-flight equipment inspection is not required by the operator or has already been performed, the inspector should inspect the equipment. If there is not enough time to inspect the emergency equipment before the flight, the inspector may choose to inspect it after the flight.

5.4.2.5 Inspectors should avoid impeding the flow of passenger traffic or in any way interfering with crewmembers conducting their respective duties. Since passengers are naturally curious about an inspector's activities, it is recommended that reasonable passenger inquiries be answered in a brief, factual, and courteous manner.

5.4.3 INFLIGHT MONITORING

5.4.3.1 This phase of the inspection includes the activities associated with boarding, pre departure, in-flight, and landing. During this part of the inspection, the inspector will have the opportunity to do the following—

- a. Evaluate operator procedures
- b. Determine adherence to company policy, safety regulations, and safe operating practices
- c. Monitor passenger safety

5.4.4 REQUIRED CABIN CREWS

5.4.4.1 When regulations require cabin crews for the operation of a flight, the number of cabin crew members required is based on the number of passenger seats and/or the emergency evacuation demonstration.

5.4.4.2 The number of required CCMs for each make, model and series aircraft used by the operator is listed in the operations specifications (Ops Specs).

5.4.4.3 There must always be a full complement of CCMs at originating and terminating points when passengers are on board. AOC holders may at intermediate stops, may reduce the number of required CCMs by dividing the number of CCMs by two and rounding down. Regulations permit an operator to substitute personnel, qualified in emergency evacuation procedures for that specific aircraft, at intermediate stops. Substitute personnel must be easily identified.

5.4.4.4 Additional, non-required, CCMs may be used by the operator.

5.5 DEFERRED MAINTENANCE

5.5.1 MINIMUM EQUIPMENT LIST (MEL), DEFERRED MAINTENANCE

5.5.1.1 The operator's approved MEL allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the MEL deferral classification and the requirements for the equipment loss.

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5.5.2 OTHER DEFERRED MAINTENANCE

5.5.2.1 Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure the continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are overhead storage bins, seatbelts, and interim airworthy repairs.

5.5.2.2 Passenger convenience item deferrals that are not safety or airworthiness related should be handled per the guidelines of the operator's programme. This may include a cabin log.

5.6 COORDINATE WITH THE OPERATOR

5.6.1 The inspector should coordinate with the operator at least 1 hour prior to the flight. While coordinating, the inspector should do the following—

- a. Identify himself or herself to the operator representative, and state that he or she is performing a cabin en-route inspection on a specific flight.
- b. Present CAASL-FSS identification and authorization to the operator representative.
- c. Obtain applicable operator boarding authorization per the airline procedures.
- d. Request access to the aircraft as soon as practical (for example, after passengers have deplaned) to meet the flight and cabin crews and perform the interior pre-departure inspection, as time permits.
- e. If aircraft access is denied, the following steps should be taken by the inspector—
 - Apprise the operator representative of the regulation authorizing inspector access to aircraft
 - Request to see the appropriate supervisor if the representative still refuses access
 - Make it very clear to the operator that the denial of access is contrary to regulations and that enforcement action may be initiated
 - Report the occurrence to the immediate supervisor upon return to the office, if access was not granted

5.7 COORDINATE WITH THE CREW

5.7.1 PRE-DEPARTURE

5.7.1.1 The inspector should perform the following during pre-departure—

- a. Ensure that each CCM has an operable flashlight readily available and has the appropriate up-to-date parts of a manual accessible when performing assigned duties.
- b. Ensure that any discrepancies noted during pre-departure are addressed per the operator's manual.
- c. Ensure that the required number of CCMs are aboard.



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- d. Observe the CCMs and ground personnel coordinating and supervising the boarding of passengers and properly stowing carryon baggage.
- e. Ensure that items such as carry-on baggage and galley supplies do not cover or in any way interfere with aircraft emergency equipment in the overhead compartments.
- f. Ensure that a required crewmember verifies that passengers seated at the emergency exit seats meet the regulatory requirements.
- g. Ensure that all passengers are seated prior to any ground movements.
- h. Ensure that the CCMs have sufficient time to take their assigned positions and to secure their restraint systems after giving the passenger briefing.

5.7.2 PRE-DEPARTURE BRIEFING

5.7.2.1 Ensure that the CCM pre-departure briefing is audible to all passengers and covers the following subjects—

- a. Smoking: When, where, and under what conditions smoking is prohibited, including a statement that federal law prohibits tampering with, disabling, or destroying any smoke detector in an airplane lavatory.
- b. Exit Locations: The preferred method is to physically Point out exits.
- c. Seatbelt Use: Instructions on how to fasten, unfasten, and adjust seatbelts.
- d. Flotation Devices: Instructions on the location and use of required individual flotation devices.
- e. Oxygen Use: Instructions on the location of and a demonstration on the use of the oxygen mask. For non-turbojet aircraft, this briefing item must only be conducted when the flight will exceed 12,000 feet mean sea level (MSL). When this occurs, the briefing must be given prior to takeoff. For large turbojet operations, the briefing must be given prior to exceeding 25,000 feet MSL.
- f. Extended Overwater Operations: Instructions on the location, donning, and use of life preservers, life rafts (or slide rafts) and other means of flotation including a demonstration of the methods of donning and inflating a life preserver.
- g. Special Passenger Briefings (when applicable): For persons who are handicapped or warrant some other special kind of attention, and for the individuals assisting them.

5.8 MOVEMENT ON THE SURFACE

5.8.1 During movement on the surface, the inspector should do the following—

5.8.1.1 Ensure that all CCMs remain seated during the taxi unless performing safety related functions. Safety related activities can include the following—

- a. Passenger preparedness
- b. Baggage/cargo/galley stowage
- c. Exit readiness

5.8.1.2 Ensure that each exit is closed and locked with the girt bars properly attached (if applicable).

5.8.1.3 Ensure that the following items or activities are accomplished prior to takeoff—

- a. All stowage compartments are properly secured and latched.
- b. The galley is prepared as follows—

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- Loose items are secured
- All serving carts are properly restrained
- c. The cockpit door is closed in accordance with the operator's manual.
- d. Passenger seatbelts are secured.
- e. Any unoccupied CCM seat restraint is properly secured for takeoff.
- f. Any other equipment is properly stowed and secured.
- g.
 - Ensure that crewmembers observe the sterile cockpit rules.

5.9 INFLIGHT OPERATIONS

5.9.1 Monitor the crewmembers' performance during in-flight operations, to ensure the following—

- a. That during takeoff each CCM remains seated with restraint systems properly fastened.
- b. That after takeoff, before or immediately after the seatbelt illumination is shut off, an announcement is made that passengers should keep their seatbelts fastened, even when the seatbelt sign is turned off.
- c. That, if the flight is to be a smoking flight, an announcement is made that smoking is only permitted in specific rows and prohibited in the aisles and lavatories when the no smoking sign is turned off.

5.9.2 Ensure that the following are accomplished, as applicable—

- a. Passenger compliance with seatbelt and no smoking signs.
- b. Effective crew coordination for flight crew and cabin crewmember communications – routine and/or emergency.
- c. Turbulent air procedures are followed, including the proper restraint of serving carts, galley equipment, and compliance with instructions from the cockpit and coordination with flight crewmembers.

5.9.3 Crewmember handling of the passengers, to include the following—

- a. Intoxicated passengers (not serving alcoholic beverages to them)
- b. Abusive or disruptive passengers
- c. Handicapped or ill passengers
- d. Passengers requiring special attention

5.9.4 Ensure that crewmembers, during the approach and landing phases of flight, prepare the cabin for arrival by performing at least the following actions—

- a. Ensuring that carry-on baggage is stowed and that all seatbacks and tray tables are upright and stowed, respectively.
- b. Removing all food, beverages, and galley service items from each passenger seat location.
- c. Ensuring that all stowage compartments are latched and secured.
- d. Ensuring that the galley is prepared as follows—
 - Loose items are secured
 - All serving carts are properly restrained



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- e. Ensuring that the cockpit door is closed and locked in accordance with the operator's manual.
- f. Verifying that passenger seatbelts and shoulder harnesses, if installed, are secured.
- g. Properly stowing and securing any other equipment.
- h. Ensure that crewmembers observe sterile cockpit rules.
- i. Ensure that crewmembers are seated in assigned seats before landing, with appropriate restraint systems fastened.

5.10 FLIGHT ARRIVAL

5.10.1 During flight arrival the inspector should do the following—

- a. Ensure that after landing, the CCMs prepare the aircraft for arrival by performing the following duties—
 - a. Before the captain has turned off the seatbelt sign, ensuring that passengers remain in their seats with seatbelts fastened
 - b. Upon arrival at the gate and after the seatbelt sign has been turned off, preparing the exits for deplaning Ensure that the appropriate complement of cabin crew members remain on board the aircraft at En-route stops (when passengers remain on board the aircraft to proceed to another destination).
- b. Debrief the captain and lead CCM of any procedural problems or discrepancies/malfunctions noted during the flight.



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APPENDIX 5A

CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Cabin En Route Inspection Report									
Date of Inspection:			Operator:			Contact Details: Civil Aviation Authority of Sri Lanka, No. 152/1, Minuwangoda Road, Katunayake, Sri Lanka. Website: www.caa.lk			
Route:		Flight No:	Aircraft Type:		Registration No:				
Captain:						Director Flight Safety Tp. 94 11 2304650 Fax. 94 11 2358879		DGCA Phone: 94 11 2358800 Fax: 94 11 2304644	
Cabin Crew In-Charge:									
Remarks legend: S – Satisfactory U – Unsatisfactory N/O – Not Observed N/A- Not Applicable									
A.	Aircraft Equipment	Remark	11.0	Galleys		4.0	Ability/Proficiency		
1.0	Required Signs and		11.1	Latch Mechanism		4.1	Removal/demo of safety Equipment		
			11.2	Restraints, Tie downs		4.2	Demo Emergency Exit		
2.0	Logbooks		11.3	Covers		4.3	Procedures		
2.1	Open Items		11.4	Cleanliness/Corrosion		5.0	Personal Equipment		
2.2	Carryover Items		11.5	Lifts/Elevators		5.1	Required Documents		
2.3	Cabin Items		11.6	Water Quality		5.2	Cockpit Key and flashlights		
3.0	Fire Extinguisher		12.0	Lavatories		6.0	Manual		
3.1	Correct Type		12.1	Signs/Lights		6.1	Available		
3.2	Number		12.2	Smoke Alarms		6.2	Current		
3.3	Location		12.3	Trash Containers		6.3	Good Condition		
3.4	Serviced		12.4	Extinguishers					
4.0	Megaphones		12.5	Locking Mechanism					
4.1	Number		13.0	Stowage Areas		C	Flight Conduct		
4.2	Location		13.1	Latch Mechanism		1.0	Pre Departure		
4.3	Tested		13.2	Access to Equipment		1.1	Pax Boarding		
5.0	Portable O₂ Bottles		14.0	Emergency Lighting		1.2	Carry-on baggage		
5.1	Number		14.1	Tested		1.3	Pax Count		
5.2	Service		14.2	Floor/ Escape Path		1.4	Door Arming		
5.3	Location		15.0	Exits		1.5	Report to flight deck		
5.4	Condition Mask/Hoses		15.1	Controls/Seals		2.0	Pre Departure briefings for		
6.0	PBE		15.2	Girt bar and Brackets					
6.1	Properly Stowed		15.3	Signs/ Symbols		2.1	Smoking		
6.2	Sealed		15.4	Rafts/ Lanyards		2.2	Exit Locations		
7.0	Pax Briefing Cards		16.0	F/A Kits		2.3	Seatbelt use		
7.1	At Each Seat		16.1	Numbers		2.4	Floatation Devices		
7.2	Required Information		16.2	Sealed		2.5	Stowage of Baggage		
8.0	Pax Seats		16.3	List of Equipment		2.6	Use of Oxygen		
8.1	Emergency Exit					2.7	Floor Path Escape Lights		
8.2	Condition		B	Cabin Crewmembers		3.0	Briefing for Special Pax.		



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8.3	Ash Trays		1.0	Crew Compliment		4.0	Taxi/Takeoff
8.4	Seatbelts/Tray Tables		1.1	Initial Boarding		4.1	Cabin Secured
8.5	Life preservers		1.2	En Route Stops		4.2	CCM Position
9.0	Pax O₂ Service Units		1.3	Trained on type		4.3	Takeoff Signal
9.1	Operational		2.0	Co-ordination with F/Deck		4.4	Announcement
9.2	Service Pins		2.1	Briefing (PIC/Purser)		5.0	Cruise
			2.2	Code Red			
10.0	CCM Seat/ Station		3.0	Knowledge		5.1	Monitor Signs
10.1	Retracts		3.1	PIC Authority		5.2	Crew Co-ordination
10.2	Seatbelts/Inertia Locks		3.2	Emergency Duties		5.3	Passenger Handling
10.3	P/A and Inter Phone		3.3	Safety Equipment		5.4	Turbulent Air Procedures
10.4	Crew Life Jackets		3.4	Handling of unruly pax		5.5	Checking of Flight Deck as
10.5	Safety Equipment Checklist		3.5	Contents of SEP Manual			Per SOPs
			3.6	Contagious / Communicable			
6.0	Approach/Landing/ Arrival						
6.1	Announcements						
6.2	Cabin Secured						
6.3	Passenger Seatbelts						
6.4	CCM position						
6.5	Passenger Monitoring						
6.6	Doors de-armed						
Remarks:							
Inspector(s)'s code:							



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Chapter 6 - FLIGHT DECK RAMP INSPECTION

6.1 OBJECTIVES OF RAMP INSPECTIONS

- 6.1.1 The primary objective of a ramp inspection is to provide inspectors with the opportunity to evaluate an air carrier operation while the crewmembers and aircraft are on the ground. A ramp inspection is an effective method for evaluating an operator's ability to prepare both the aircraft and crew for a flight to be conducted.
- 6.1.2 Also, when a ramp inspection is conducted after the completion of a flight, it is an effective method for determining whether the aircraft and crew were adequately prepared for the flight, as well as for evaluating the operator's post flight and/or turnaround procedures and crewmember and ground personnel compliance with these procedures.
- 6.1.3 Ramp inspections allow inspectors to observe and evaluate the routine methods and procedures used by an operator's personnel during the period immediately before or after a flight, to determine compliance with regulations and safe operating practices.

6.2 RAMP INSPECTION AREAS

- 6.2.1 There are five general inspection areas that can be observed and evaluated during ramp inspections. These inspection areas are as follows—
 - a. Crewmember
 - b. Line station operations
 - c. Aircraft
 - d. Servicing and maintenance
 - e. Ramp and gate condition and activity
- 6.2.2 The "crewmember" inspection area refers to the evaluation of crewmember preparation for flight and compliance with post flight procedures. This area includes evaluations of crewmember manuals and any required flight equipment, flight crew flight planning, flight crew airman and medical certificates, crewmember disposition of trip paperwork, and other items that relate to crewmember responsibilities.
- 6.2.3 The "line station operations" inspection area refers to the various methods and procedures used by the operator to support the flight, such as distribution of dispatch, flight release, and flight locating paperwork; distribution of weather reports, PIREPs and other flight planning material; passenger handling; boarding procedures; and carry-on baggage screening.
- 6.2.4 The "aircraft" inspection area refers to the aircraft's general airworthiness, logbook entries, MEL compliance, carry over's, and required items of emergency and cabin safety equipment.
- 6.2.5 The "servicing and maintenance" inspection area applies to any ongoing maintenance and servicing, such as fuelling, de-icing, or catering. This area is usually evaluated in detail by airworthiness inspectors when performing their ramp inspections. Operations inspectors should, however, observe this area and comment on obvious deficiencies for airworthiness inspector follow up.
- 6.2.6 The "ramp and gate condition and activity" inspection area refers to taxi and marshalling operations, ramp or parking area surfaces, any apparent contamination or debris, vehicle operations, and the condition and use of support equipment.



6.3 GENERAL RAMP INSPECTION PRACTICES & PROCEDURES

6.3.1 WHEN TO CONDUCT

6.3.1.1 Ramp inspections may be conducted before a particular flight, at en route stops, or at the termination of a flight.

6.3.1.2 A ramp inspection may be conducted any time an aircraft is at a gate or a fixed ramp location, provided the inspection is conducted when the crew and ground personnel are performing—

- a. The necessary preparations for a flight, or
- b. Post flight tasks and procedures.

6.3.2 AVOID UNNECESSARY DELAYS

6.3.2.1 Inspectors must, however, conduct inspections in a manner that does not unnecessarily delay crewmembers and/or ground personnel in the performance of their duties.

6.3.2.2 The following areas of conduct should be observed by inspectors during ramp inspection activities—

- a. Inspectors should not interrupt crew or ground personnel when they are performing a particular phase of their duties.
- b. When inspection activities require inspectors to interact directly with the crew or ground personnel, the activities should be timed to be accomplished when the crew or ground personnel are waiting to begin another phase of their duties or after they have completed one phase of their duties and before they begin another phase.
- c. Inspection activities must be timed so that they do not delay or interfere with passenger enplaning or deplaning.
- d. Inspection activities should not adversely impede aircraft servicing or catering.

6.3.3 LIMITED IN SCOPE

6.3.3.1 Because of the wide range of inspection areas involved, ramp inspections are usually limited in scope.

6.3.3.2 There are many preparatory or post flight actions that occur simultaneously and one inspector cannot physically observe all of these actions for a particular flight.

6.3.3.3 As a result, the inspector should vary the areas of emphasis for an inspection—

- a. For example, on one ramp inspection the inspector may decide to observe and evaluate the PIC accomplishing flight planning and the operator's methods for providing the flight crew with appropriate flight planning support.
- b. On another ramp inspection, the inspector may decide to observe the SIC accomplish the aircraft exterior pre-flight and then evaluate the aircraft's interior equipment and furnishings.
- c. As an example of a ramp inspection conducted at the termination of a flight, the inspector may decide to inspect the aircraft's interior equipment, furnishings, and aircraft logbooks, and then evaluate the trip paperwork turned in by the crew. In this

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example, the inspector may not have an opportunity to interact directly with the crew, therefore the "crewmember" inspection area would not be accomplished.

- d. Inspectors should vary both the sequence and the emphasis of the inspection areas during a ramp inspection.

6.3.4 USING A CHECKLIST

6.3.4.1 Inspectors should use the ramp inspection checklist when conducting ramp inspections. This job aid contains a listing of items ("reminders") that should be observed and evaluated by the inspector during the inspection.

6.3.4.2 There may be items evaluated during a ramp inspection that are not listed on the checklist. A note can be made in the checklist to help describe how the inspection was limited in scope. The checklist can also be used to make notes during the inspection which can be entered in the CAA General Inspection database.

6.4 SPECIFIC RAMP INSPECTION PRACTICES & PROCEDURES

6.4.1 CREWMEMBER INSPECTION AREAS

6.4.1.1 When an inspector makes direct contact with a crewmember, the inspector should provide an official but courteous introduction, offer appropriate identification for the crewmember to inspect, and inform the crewmember that a ramp inspection is being conducted.

6.4.1.2 If the direct contact is with a flight crewmember, the inspector should request to see the crewmember's airman and medical certificates. The inspector should review the certificates to see that they meet the appropriate requirements for both the duty position and for the aircraft for the flight to be conducted or that was just terminated.

6.4.1.3 When the direct contact is with flight crewmembers or cabin crew members, the inspector should also request to examine the crewmember's professional equipment.

- a. Crewmember professional equipment includes any equipment that crewmembers are required to have according to regulation or operator policies, either on their person or that which will be available during the flight.
- b. Examples of professional equipment include aeronautical charts, appropriate operator manuals, and operable flashlights.
- c. Inspectors should determine whether the charts and manuals carried by crewmembers are current.

6.4.1.4 The following is a list of other items and activities that, depending on the scope of the ramp inspection, should be observed and evaluated—

- a. Flight crew flight planning activities, such as review of weather, flight plans, anticipated take-off weight and performance data, flight control requirements (dispatch, flight release, flight locating, ATC flight plans)
- b. Flight crew aircraft pre-flight activities, such as exterior walk around, logbook reviews, and cockpit setup procedures, including stowage of flight crew baggage and professional equipment

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- c. Cabin crew inspection of cabin emergency equipment and cabin setup procedures, including stowage of cabin crew baggage and professional equipment
- d. Flight crew and cabin crew post flight logbook entries and proper use of MELs and placards
- e. Completed trip paperwork and the appropriate disposition of such paperwork
Inspectors should describe in their reports how the inspection was limited in scope.

6.4.2 LINE STATION OPERATIONS AREA

6.4.2.1 This area of a ramp inspection usually involves a facility (or designated area of a facility) including related ground personnel, and is commonly referred to as "line station operations."

- a. Line station operations include a designated location where crewmembers go to review and pick up required flight paperwork or to deposit flight reports, to send or receive communications with the operator's flight control system, and to join up with other crewmembers assigned to the flight.
- b. Line station operations also include gates and ramp areas where passengers and cargo are enplaned and deplaned.

6.4.2.2 The following is a list of items and activities that, depending on the scope of the inspection, should be observed and evaluated in this inspection area—

- a. Pre-flight and post flight trip paperwork, such as load manifests, flight plans, weather reports and forecasts, NOTAMs, dispatch or flight release messages and operator bulletins
- b. Methods used by the operator to comply with MEL and CDL requirements, particularly the pre-flight information provided to the crew
- c. Adequacy of facility with respect to crewmember and ground personnel use for completing pre-flight and post flight responsibilities, including work areas and administrative support (such as forms, charts, and copy machines when required by company procedures)
- d. Usability and currency of operator manuals and aircraft performance information maintained at the line station operations area for crew and ground personnel use
- e. Company communication capabilities and procedures
- f. Passenger enplaning and deplaning including public protection procedures and carry-on baggage screening.
- g. Cargo and baggage loading and stowage procedures and unloading procedures

6.4.3 AIRCRAFT INSPECTION AREA

6.4.3.1 Ramp inspections must include at least an examination of the aircraft's registration, airworthiness certificate, and maintenance logbook.

6.4.3.2 Inspectors should plan their ramp inspection activities so that any inspection of the aircraft's interior equipment and furnishings would be conducted either before passengers are enplaned or after they are deplaned.

6.4.3.3 The following is a list of items that should be observed in this inspection area—

- a. Aircraft registration and airworthiness certificates

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- b. Aircraft and cabin logbooks (or equivalent) (open discrepancies, carryover items, and cabin equipment items needing repair or replacement)
- c. Appropriate placarding
- d. Fire extinguishers (correct types, numbers and locations; properly serviced, safe-tied, tagged, and stowed)
- e. Portable oxygen bottles (correct numbers and locations; properly serviced, tagged, and stowed; condition of mask, tubing, and connectors)
- f. Protective breathing equipment (properly located, stowed, and sealed)
- g. First aid kits and emergency medical kits (correct numbers and locations; properly sealed, tagged, and stowed)
- h. Megaphones (correct numbers and locations; in operable condition, and properly stowed)
- i. Crash axe (properly located and stowed)
- j. Passenger briefing cards (one at each seat position; appropriate to aircraft; required information including emergency exit operation, slides, oxygen use, seatbelt use, brace positions, flotation devices; appropriate pictorials for extended overwater operations, including ditching exits, life preserver, and life or slide raft in-flight location)
- k. Passenger seats (not blocking emergency exits; TSO label on flotation cushions; cushion intact; latching mechanism on tray tables; armrests have self-contained and removable ashtrays; seatbelts properly installed, operational, and not frayed or twisted)
- l. Passenger oxygen service units (closed and latched with no extended red service indicators or pins)
- m. Cabin crew stations (operable seat retraction and restraint systems; properly secured; harnesses not frayed or twisted; seat cushions intact; headrests in correct position; PA system and interphone)
- n. Galleys (latching mechanisms - primary and secondary; tie downs; condition of restraints, padding; proper fit of cover and lining of trash receptacles; hot liquid restraint systems; accessibility and identification of circuit breakers and water shutoff valves; non-skid floor; girt bar corroded or blocked by debris; clean stationary cart tie downs (mushrooms); galley carts in good condition and properly stowed; lower lobe galley emergency cabin floor exits passable and not blocked by carpeting, if applicable)
- o. Galley personnel lift, if applicable (no movement up or down with doors open; safety interlock system; proper operation of activation switches)
- p. Lavatories (smoke alarms; no smoking placards; ashtrays; proper fit of cover and lining of trash receptacles; automatic fire extinguisher systems)
- q. Stowage compartments (weight restriction placards; restraints and latching mechanisms; compliance with stowage requirements; accessibility to emergency equipment; carry-on baggage provisions)
- r. Required placards and signs (seatbelt, flotation equipment placards at seats; emergency/safety equipment placards; weight restriction placards; no smoking/seatbelt signs; no smoking placards; exit signs and placards, including door opening instructions)
- s. Emergency lighting system (operation independent of main system; floor proximity escape path system; controllability from cockpit)
- t. Exits (general condition; door seals; girt bars and brackets; handle mechanisms; signs; placards; slide or slide raft connections and pressure indications; lights and switches)
- u. Main landing gear viewing ports, if applicable (cleanliness and usability)



6.4.4 SERVICING AND MAINTENANCE INSPECTION AREA

6.4.4.1 The servicing and maintenance of the aircraft may be observed at any time during the ramp inspection.

6.4.4.2 The following is a list of some areas that may be observed and evaluated in this inspection area—

- a. Fuelling procedures (ground wires in place; fuel slip properly completed; fuller trained in the operator's specific procedures)
- b. Routine maintenance (qualifications of mechanics, repairmen or service agents; appropriate logbook entries)
- c. De-icing procedures (compliance with company procedures; proper glycol/water ratios and temperatures; avoidance of engine/APU inlets; removal of all snow and ice; trailing and leading edges free of snow and ice and covered completely with de-icing fluid)
- d. Correct procedures used by service contractors (caterers; cleaners; lavatory and water servicing personnel; correct use of switches and controls)
- e. Vehicle operation near aircraft (general condition and proper servicing of vehicles and equipment)

6.5 RAMP AND GATE CONDITION AND ACTIVITY INSPECTION AREA

6.5.1 During ramp inspections, inspectors should observe and evaluate the ramp and gate surface condition as well as any support activities being conducted during an inspection.

6.5.2 Inspectors should observe vehicular operations on the ramp and around gate areas and other aircraft operations during marshalling, taxiing, or towing operations. Inspectors should report any condition that appears to be unsafe or could potentially be unsafe.

6.5.3 The following is a list of some items that should be observed and evaluated in this inspection area—

- a. Ramp, apron, and taxiway surfaces (general condition; cracks; holes; uneven surfaces)
- b. Contamination debris (FOD; fuel, oil, or hydraulic spills; snow and ice accumulations; taxi lines; gate markings; signs; signals)
- c. Construction (appropriate barriers; signs; markings; flags)
- d. Vehicular operations (conducted safely around aircraft and gate areas by qualified personnel)



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APPENDIX 6-A

CIVIL AVIATION AUTHORITY OF SRI LANKA Commercial Airlines' Safety Assessment (CASA) Ramp Inspection Report			
Start Date and Time:		End Date and Time:	State and Place:
Operator:		AOC:	Contact Details of CAASL CASA Coordinator, Deputy Director General Flight Safety Regulations CAASL, No. 152/1, Minuwangoda Road, Katunayake, Sri Lanka. Tp. 94 11 2257296 Fax. 94 11 2257295 www.caa.lk
Route From:		Flight No :	
Route To:		Flight No:	
Flight Type:	Chartered by Operator:	Charter's state:	
Aircraft Type:	Aircraft Configuration:	Registration marks:	Safety Oversight Authority DGCA No. 152/1, Minuwangoda Road, Katunayake, Sri Lanka. Tp. 94 11 2252017 Fax. 94 11 2253038 www.caa.lk
Flight Crew State of licensing:		Construction No:	

Remarks legend: S – Satisfactory | U – Unsatisfactory | N/O – Not Observed | N/A Not Applicable

A Flight Deck		Remark	23	Life Jackets / Flotation Device		14	Seat Capacity	
1	General Condition		24	Harness		C	Aircraft Condition	
2	Emergency Exit		25	Oxygen Equipment		1	General External Condition	
3	Equipment		26	Flash Light		2	Doors and Hatches	
	Documentation			Flight Crew		3	Flight Control	
4	Manuals		27	Flight Crew Licence		4	Wheels, tyres & brakes	
5	Checklists			Journey Log Book / Technical Log/ Voyage Report		5	Undercarriage skids/floats	
6	Radio Navigation Charts/Route guide		28	Journey Log/Tech Log/ Voyage Report or Equipment		6	Wheel well	
7	Minimum Equipment List		29	Maintenance Release		7	Powerplant & pylon	
8	Certificate of Registration		30	Defect notification and rectification		8	Fan Blades	
9	Noise Certificate (Where applicable)		31	Pre-flight Inspection		9	Propellers, Rotors (Main & tail)	
10	Air Operator Certificate and Ops Specs			Safety / Cabin		10	Obvious repairs	
11	Radio Licence		B	Safety / Cabin		11	Obvious unrepaired damage	
12	Certificate of Airworthiness (C of A)		1	General Internal Condition		12	Leakage	
13	Documents required to be carried on board		2	Cabin attendant's station/crew rest areas		13	Intake and Exhaust Nozzle	
14	Identification Plate		3	First aid kit/Emergency medical kit			Cargo	
	Flight Data		4	Hand fire extinguishers		D	Cargo	
15	Flight Preparation		5	Life Jackets / Flotation Device		1	General condition of Cargo comp.	
16	Weight and Balance Sheet		6	Seat belts and seat conditions		2	Dangerous Goods	
17	Operational Flight Plan		7	Emerg. Exit, lightning & marking, torches		3	Safety of cargo on board	
18	Aircraft Performance Limitations		8	Slides / Life -rafts / ELT			General	
19	Cargo and Passenger Manifest		9	Oxygen supply (Cabin crew & Pax)		E	General	
20	Weather Reports and Forecasts		10	Safety Instructions		1	Additional remarks	
21	NOTAMS		11	Cabin Crew Members		2	Security of Flight Deck Door	
	Safety Equipment		12	Access to emergency Exit		3	Refueling with Pax on board	
22	Hand Fire Extinguishers		13	Safety of Passenger Baggage		4	Language for communication	

Remarks



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Action Taken		Crew comments (optional)
	(3c) Aircraft grounded by inspecting NAA	
	(3b) Corrective actions before flight	
	(3a) restrictions on the aircraft operations	
	(2) Information to the authority & operator	
	(1) Information to the captain	Captain's name:
	(0) No remarks	Inspector(s)'s code(s)
	Maintenance check required	

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Chapter 7 - CABIN RAMP INSPECTION

7.1 START OF INSPECTION

7.1.1 Before boarding the aircraft or performing any inspection, the inspector should coordinate with the crew as follows—

- a. Identify himself or herself to the captain and to the lead CCM as an CAASL-FS inspector
- b. State the purpose of the inspection

7.2 INSPECT EQUIPMENT ITEMS

7.2.1 The inspector should inspect the following, as applicable—

- a. Cabin placarding, markings, and signs (for example, exits, no smoking signs, and emergency equipment), to ensure marking legibility and the correct location.
- b. Fire extinguishers for the following:
 - To verify the quantity and location
 - To ensure that they are properly serviced, tagged, and stowed
- c. Portable oxygen bottles for the following:
 - To verify the quantity and location
 - To ensure that they are properly serviced, tagged, and stowed
 - To determine the condition of the mask, tubing, and connectors.
- d. Protective breathing equipment (PBE) for correct location, proper number of units, and proper stowage.
- e. First aid kits and emergency medical kits for correct number, location, and stowage.
- f. Megaphones for correct number, location, general condition, and proper stowage.
- g. Overwater equipment as applicable.

7.3 INSPECT PASSENGER-RELATED ITEMS

7.3.1 Passenger briefing cards, to ensure the following—

- a. That they are available for each passenger
- b. That they are appropriate to the aircraft
- c. That they contain the required information, to include the following—:
 - Emergency exit location and operation
 - Slide use and location
 - Oxygen use
 - Seatbelt use
 - Flotation device use and location
 - Appropriate pictorials for extended overwater operations, including ditching exits, life preservers, and life raft or slide raft in-flight location
 - Exit seating information

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- d. Passenger seats, to ensure the following—
- That a reclined seat does not block emergency exits
 - That the seat cushions are intact
 - That the tray table latching mechanisms are operable
 - That the self-contained and removable ashtrays are in serviceable condition and are available
 - when smoking is authorized
 - That each seat has a complete restraint system
 - That seatbelts are operational and not frayed or twisted
- e. Passenger oxygen service units to ensure that they are closed and latched, without any extended red service indicators or pins.

7.4 INSPECT CABIN CREW ITEMS

7.4.1 Inspect CCM station, to ensure the following—

- a. That the seat retraction/restraint system is operational and is properly secured
- b. That the seatbelts are operational and not frayed or twisted
- c. That the seat cushions are intact
- d. That the seat headrest is in the correct position
- e. That the public address (PA) system and interphone are operable
- f. That aircraft installed flashlight holders are indeed installed

7.5 INSPECT GALLEY ITEMS

7.5.1 Inspect galleys, to ensure that the following items are operable—

- a. The latching mechanisms (primary and secondary)
- b. The tie downs
- c. Other galley restraints
- d. That the hot liquid restraint system is operable
- e. That the circuit breakers and water shutoff valves are accessible and properly identified
- f. That the cover and lining of trash receptacles fit properly
- g. That the non-skid floor is serviceable
- h. That the girt bar is clean and serviceable
- i. That the stationary cart tie downs (mushrooms) are clean
- j. That the galley carts are in serviceable condition and properly stowed
- k. That, if applicable, the lower lobe galley emergency cabin floor exits are passable and not covered by carpeting

7.5.2 Galley personnel lift (if applicable) to ensure that it does not move up or down with the doors open and that the activation switches operate properly.



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Chapter 8 - FLIGHT CREW QUALIFICATION RECORDS INSPECTION

8.1 GENERAL

- 8.1.1 This evaluation aid provides guidelines for the acceptance of crew record keeping guidance and forms. It also provides a basis for the conduct of the validation inspections that must be accomplished on a regular basis.

8.2 CONDUCT OF INSPECTION

- 8.2.1 Follow the general inspection guidance of Chapter 3 for the conduct of the inspection, select specific named files and record those names, then:
- 8.2.2 Using a tablet lay out columns for the training and qualification requirements. Use a checklist as necessary to label the columns.
- 8.2.3 Enter the crew name in the left column and began historically through the file to determine if the crewmember is historically and/or currently qualified to conduct commercial air transport operations.
- 8.2.4 Pay particular attention to any breaks in qualifications that are outside of the eligibility periods.
- 8.2.5 Crosscheck dates of training or checking with other records, such as the crew flight time records, aircraft tech log, simulator log, etc., to verify the accuracy of the records.
- 8.2.6 Resolve any apparent discrepancies on the spot if possible.
- 8.2.7 Make copies of any documents that may be necessary to further investigation.
- 8.2.8 Complete an Action report.



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APPENDIX 8-A
CIVIL AVIATION AUTHORITY OF SRI LANKA
Air Operator Training and Qualification Records Checklist/Report
CAA/OP/CL/059

Operator	Date	Location	Inspector
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S=Satisfactory; U=Unsatisfactory; N= Not Observed; NA= Not Applicable

<p>1.____ ADEQUACY. Comments:</p> <p>2.____ PRACTICALITY. Comments:</p> <p>3.____ ACCESSIBILITY and SECURITY. Comments:</p> <p>4.____ ACCURACY. Comments:</p> <p>5.____ CURRENCY. Comments:</p> <p style="text-align: center;">Remarks:</p> 	<div style="border: 1px solid black; height: 100px; margin-bottom: 10px;"></div> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>OVERAL RESULT:</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <input style="width: 30px; height: 20px; margin-right: 10px;" type="checkbox"/> Satisfactory </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <input style="width: 30px; height: 20px; margin-right: 10px;" type="checkbox"/> Unsatisfactory </div> </div> <div style="width: 35%; text-align: center; margin-top: 20px;"> <p><i>INSPECTOR'S SIGNATURE</i></p> </div> </div>
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Chapter 9 - CABIN CREW QUALIFICATION RECORDS INSPECTION

9.1 GENERAL

- 9.1.1 This inspection is to ensure that the AOC holder is qualifying the cabin crew as outlined in their approved training programme and recording the qualification in a timely manner.

9.2 CONDUCT OF INSPECTION

- 9.2.1 Following the general inspection guidance in the conduct of the inspection, select specific named files and record those names, then:
- 9.2.2 Using a tablet, lay out columns for the training and qualification requirements. Use a checklist as necessary to label the columns.
- 9.2.3 Enter the crew name in the left column and began historically through the file to determine if the crewmember is historically and/or currently qualified to conduct commercial air transport operations.
- 9.2.4 Pay particular attention to any breaks in qualifications that are outside of the eligibility periods.
- 9.2.5 Crosscheck dates of training or checking with other records, such as the crew flight time records, aircraft tech log, simulator log, etc., to verify the
- 9.2.6 Resolve any apparent discrepancies on the spot if possible.
- 9.2.7 Make copies of any documents that may be necessary to further investigation.
- 9.2.8 Complete an Action report.



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Chapter 10 - CREW FLIGHT TIME RECORDS

10.1 General

In reference to IS 013 para 10 and IS 054 an AOC holder shall ensure require an AOC holder to manage fatigue through the establishment of flight time, flight duty period, duty period and rest period limitations that are within the limits prescribed.

An air operator shall maintain records for all its flight and cabin crew members of flight time, flight duty periods, duty periods and rest periods for 15 months respectively.

The primary objective of the inspection of fatigue management records is to ensure that operators comply with operations manual and appropriate CAASL regulations relating to flight time, duty period, flight duty period and rest period limitations.

10.2 GENERAL INSPECTION PRACTICES AND PROCEDURES

10.2.1 Prior to arriving at the air operator facility, inspectors shall review in detail the specific fatigue management requirements as contained in the air operator operations manual. When reviewing the operations manual the inspector shall verify that it complies with the published requirements. At the commencement of the inspection at the air operator facility, the inspectors shall receive a briefing from operator staff regarding their fatigue management record keeping system in its entirety. The system must ensure that all limitations for management of fatigue as described in the operations manual are not exceeded.

10.2.2 The system shall also record as duty all tasks carried out at the behest of the operator. Persons are considered to be on duty if they are performing any tasks on behalf of the AOC holder, whether scheduled, requested or self-initiated. Regulations permit limitations to be exceeded due to circumstances such as adverse weather conditions or adverse situations beyond the control of the AOC holder. Inspectors shall review any such instances to ensure that the flight duty period was planned within the allowable limits and the circumstances were actually beyond the control of the operator.

10.2.4 The inspector shall then review a sufficient number of records for individual crew members to ensure that regulatory requirements are being met. Figures which are used in flight time summaries (cumulative totals) to track required time intervals shall be checked against original flight logs or similar records, to ensure that times for specific flights are being accurately recorded and totalled. Similarly, flight times which appear on flight logs and summaries may be checked against maintenance or payroll records for consistency.

10.3 INSPECTION AREAS

The record-keeping system shall have the following attributes:

10.3.1 **Operation Manual Policies.** The record-keeping system which the operator uses is adequate for recording all essential information to demonstrate full compliance with CAASL requirements.

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- 10.3.2 **Crew Scheduling.** Persons responsible for Crew Scheduling shall be trained appropriately. Data regarding flight and duty time shall be readily accessible to personnel who have responsibility for scheduling and monitoring compliance with various time intervals. Records shall be secure from tampering or other unauthorized access.
- 10.3.3 **Actual Duty / Flight/ Rest Records Comparison.** The published rosters against the actual rosters should be carefully looked into. Data available to personnel responsible for ensuring that individual crew members do not exceed regulatory requirements shall be updated expeditiously. The system used by the operator shall provide that schedulers and/or flight control personnel are made aware in a timely manner when daily totals may be exceeded. Flight time totals from written crew logs must be expeditiously transmitted to the scheduling or flight control office, so that weekly and monthly totals, where required, may be promptly updated.
- 10.3.4 **Accuracy.** The system shall faithfully track daily flight and duty time and rest periods for crew members and accurately reflect totals for longer prescribed time intervals.
- 10.3.5 **Conformity.** The records shall reflect conformance with regulatory flight and duty time limitations.

10.4 INSPECTION REPORTING PROCEDURES

The Air Operator Fatigue Management Inspection Checklist/Report which appears at the end of this section reflects the areas discussed in paragraph 10.3 above and shall be used for all such inspections. Inspectors shall indicate in the comments section of the report form the scope of their records inspections (i.e. number of individual crew member records inspected, time interval covered, cross-checks with other records, etc.)

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APPENDIX 10-A
CIVIL AVIATION AUTHORITY OF SRI LANKA
Air Operator Flight and Duty Time Records Inspection Checklist/Report
CAA/OP/CL/058

Check List for Crew Flight Time Records Inspection

Name of The Operator		AOC No	
Name of the Inspector		Date	

REFERENCE – *IS 054*
 IS 013, Chapter 4
 DOC 9966
 SLCAP 4210

Y = YES N = NO NS = NOT SEEN NA = NOT APPLICABLE

<i>Check YES column if you reviewed the record, procedure or event and have no comment</i>
<i>Check NO column if you reviewed the record, procedure or event and have a comment</i>
<i>Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment</i>
<i>Check NOT APPLICABLE column if the line item is not required in this particular Operator</i>
<i>Make notes regarding a NO answer for resolution</i>

Y	N	NS	NA	1	OPERATIONS MANUAL POLICIES
				1.1	Maximum annual flight time policy included and complies?
				1.2	Maximum 30 day flight time policy included and complies?
				1.3	Maximum 7 day flight time policy included and complies?
				1.4	Maximum 24 hour flight time policy included and complies?
				1.5	Inadvertent over flight policy included and complies?
				1.6	Minimum rest period policy included and complies?
				1.7	Maximum duty time policy included and complies?
				1.8	Policy for deadheading and other travel during rest period included?
				1.9	Augmented crew policies included and comply?
				1.10	Form and method of tracking and recording duty/flight/rest included and acceptable?
				1.11	Retention method and period included and acceptable?
				1.12	Operations manual portions regarding duty/flight/rest times available to and consulted by the persons assigned to scheduling and tracking times?
Y	N	NS	NA	2	CREW SCHEDULING
				2.1	Acceptable, qualified person(s) specifically assigned to accomplish crew scheduling duties?
				2.2	Schedule of duty/flight/rest periods available for each individual selected?
				2.3	Crew scheduling records provide an analytical display of scheduled duty/flight/rest for each 24 hour period?
				2.4	Crew scheduling times corresponds to published air carrier schedule?



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Y	N	NS	NA	3	RECORDING & RETENTION OF RECORDS
				3.1	Acceptable person(s) specifically assigned the duty of recording and/or retaining actual records?
				3.2	Tracking method complies with operations manual policies?
				3.3	Retention method complies with operations manual policies?
				3.4	Retention location and responsible person corresponds with CAASL Records?
Y	N	NS	NA	4	ACTUAL DUTY/FLIGHT/REST RECORDS COMPARISON
				4.1	Record of actual duty/flight/rest available for each individual selected?
				4.2	Record of actual times corresponds to flight following records?
				4.3	Record of actual times corresponds to aircraft tech log entries?
				4.4	Record of actual times corresponds to pay records?
				4.5	Record of actual times corresponds to ATC records?
Y	N	NS	NA	5	TOTAL TIME RECORDS
				5.1	Records current to the date of inspection?
				5.2	Total flight hours per 12 month periods do not exceed regulations?
				5.3	Total flight hours per 30 day period do not exceed regulations?
				5.4	Total flight hours per 7 day periods do not exceed regulations?
				5.5	Total flight hours per 24 hour periods do not exceed regulations?
Y	N	NS	NA	6	RUNNING 24 HOUR RECORDS
				6.1	Recording method provides for a continuous updating of actual record of duty/flight/rest each 24 hours?
				6.2	Maximum total 24 hour duty time periods not exceeded?
				6.3	Maximum total 24 hour flight time periods not exceeded?
				6.4	Minimum total 24 hour rest periods not infringed?
				6.5	Instances of operational over flight of times properly explained?
				6.6	Minimum rest periods adjusted for any operational over flight situation?
Y	N	NS	NA	7	AUGMENTED CREW SITUATIONS
				7.1	AOC holder approved by CAASL for augmented crew situations?
				7.2	Policies for acceptable augmented crew included in operations manual?
				7.3	Were the inflight crew rest quarters approved by CAASL?
				7.4	Maximum total 24 hour augmented crew flight time not exceeded?
				7.5	Minimum inflight rest periods not infringed?
<i>Inspector's Remarks</i>					
Date:				Signature:	
<i>D/Ops's Remarks</i>					
Date:				Signature:	



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Chapter 11 - FLIGHT PREPARATION & TRIP RECORDS

11.1 GENERAL

- 11.1.1 The primary objective of flight preparation (trip) records inspections is for inspectors to ensure that operators meet the regulatory requirements of IS 013 for the proper use, documentation, and retention of operational trip records.
- 11.1.2 Inspectors can evaluate trip records to reconstruct a particular flight or a series of flights by examining flight plans, dispatch or flight releases, loading and weight documents, weather documents, and other related flight information retained by the operator.
- 11.1.3 Trip record surveillance includes an evaluation of the quality of the recorded data, a check of the calculations for accuracy, and a check of the operator's compliance with the ANR and company procedures. This guidance to be used by inspectors when evaluating and conducting an inspection of an operator's trip records.

11.2 FLIGHT PREPARATION RECORDS REQUIREMENTS

- 11.2.1 Inspectors should ensure that, in the subject areas that follow, AOC holders meet the following requirements—

11.2.1.1 RETENTION OF FLIGHT PREPARATION RECORDS

AOC holders are required to retain for at least 15 months the originals, copies, or electronic versions of the completed load manifest (or information from it, except information concerning cargo and passenger distribution); the dispatch release; and the flight plan.

11.2.1.2 LOAD MANIFESTS

Inspectors should ensure that the operator's load manifest contains the requirements of IS 013 with emphasis on the following information—

- Individual weights of the aircraft, fuel and oil, cargo and baggage, passengers, and crewmembers
- Maximum allowable takeoff weight: runway to be used, runway limit, and climb limit, en-route performance limits, destination landing weight limits, and destination or alternate landing distance limits
- Total aircraft takeoff weight (as computed under approved procedures)
- Documentation that the aircraft is properly loaded with the centre of gravity within approved limits
- Passenger names (unless such information is maintained elsewhere by the operator)

11.2.1.3 OPERATIONAL FLIGHT PLAN AND FLIGHT RELEASE

Inspectors should ensure that the operator's operational flight plan and flight release meets the requirements of IS 013, with emphasis on the following information—

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- Aircraft identification number
- Trip number
- Departure airport, intermediate stops, destination airports, and alternate airports
- A statement of the type of operation (IFR or VFR)
- Minimum fuel required
- Weather reports and forecasts for the destination airport, each intermediate stop, and any alternate airport that is the latest information available at the time the release is signed

11.2.1.4 **FLIGHT PLAN**

Inspectors must ensure that the operator's flight plan contains at least the following information (as required by IS 013)—

- Aircraft identification number)
- Type of aircraft
- Flight number
- Name of the pilot in command (PIC) (usually found on the flight release)
- Point and proposed time of departure
- Proposed route, cruising altitude (or flight level), and true airspeed at the cruising altitude
- Point of first intended landing and the estimated elapsed time until over that point
- Amount of fuel on board (in hours)
- An alternate airport - if the first point of intended landing does not have a prescribed standard instrument approach procedure, or the weather at that airport for at least 1 hour before and 1 hour after the estimated time of arrival (ETA) indicates the ceiling will be at least 2000 feet above the airport elevation and the visibility will be at least 3 miles
- Number of persons in the aircraft, except where that information is otherwise readily available to the CAASL.
- Any other information that either air traffic control (ATC) or the PIC finds necessary for ATC purposes

11.2.1.5 **JOURNEY LOG/TECHNICAL LOG**

- a. Inspectors conducting a trip records inspection should also review and compare this log to the other flight preparation records for validation.
- b. Particular attention should be given to the airworthiness release. Inspectors must ensure that the airworthiness release has been prepared in accordance with the procedures set forth in the operator's manual. The release must also include a statement of certification that the following conditions have been met—
 - Any work performed on the aircraft was performed in accordance with the requirements of the operator's manual
 - All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed
 - No known condition exists that would make the aircraft not airworthy



- Concerning the work performed, the aircraft is in condition for safe operation

11.3 FLIGHTS REQUIRING OPERATIONAL FLIGHT PLAN & FLIGHT RELEASE

11.3.1 For all flights involving commercial air transport of passengers or cargo, a flight release must be signed and an operational flight plan must be executed by the PIC and the flight dispatcher for the following types of flights—

- a. All scheduled flights
- b. All extra section (unscheduled) flights
- c. All charter flights
- d. All demonstration flights

11.4 PILOT ROUTE CERTIFICATION

11.4.1 Inspectors must ensure that the PIC has certified to having examined all applicable enroute and destination information as required by the regulations. This information includes such items as: weather information, navigation facilities, communication procedures, terrain and obstructions, minimum flight levels, instrument approach procedures, airport diagrams, and NOTAMs.

11.4.2 If the flight is to be conducted through an area or to an airport, either of which is designated as a "special airport" or a "special area" by the CAASL, the PIC must be qualified to conduct the flight.

11.4.3 To meet the "special airport" qualification requirements, the PIC must have accomplished, within the preceding 12 calendar months, the following—

- a. Made an entry to that airport (including a takeoff and landing) while serving as a pilot crewmember (PIC or second in command (SIC))
- b. Qualified by using pictorial means acceptable to the CAASL for the airport

11.4.4 To meet the "special area" qualification requirements, the PIC must have, within the preceding months, become or remained qualified for the route to be flown by adequately demonstrating one of the following methods—

- a. Flying over the route or area as PIC using the applicable navigation system
- b. Flying over the route or area as PIC under the supervision of a check pilot, using the applicable navigation system
- c. Completing an approved Class II navigation training programme

11.5 TRIP RECORDS INSPECTION AREAS

11.5.1 During a trip records inspection, the inspector should not consider any one inspection area to be more important than any other inspection area. Five general inspection areas have been identified as areas to be evaluated during trip records inspections.



11.5.2 GENERAL INSPECTION AREA

- 11.5.2.1 This inspection area refers to those inspection elements that are common to all trip records. Inspectors should evaluate such items as record availability, legibility, currency, and content, as they relate to regulatory record keeping requirements.

11.5.3 FLIGHT PLAN INSPECTION AREA

- 11.5.3.1 This inspection area refers to the flight planning requirements for AOC holders. Inspectors should evaluate such items as flight plan content, listing of alternate airports, and fuel loads.

- 11.5.3.2 Many AOC holders incorporate the flight plan and the flight release into one document. This is acceptable and reduces the duplication of information that may be required by both documents.

11.5.4 FLIGHT RELEASE INSPECTION AREA

- 11.5.4.1 This inspection area refers to all AOC holders.

11.5.5 LOAD MANIFEST INSPECTION AREA

- 11.5.5.1 This inspection area refers to the regulatory requirements of IS 013.
- 11.5.5.2 Inspectors must inspect and validate the operator's loading documents to ensure accuracy and compliance with the ANR.

11.5.6 OTHER REQUIRED DOCUMENTS INSPECTION AREA

- 11.5.6.1 This inspection area refers to such items as pertinent weather forecasts, NOTAMs, fuel slips, and other documents that are issued to flight crewmembers before each flight.

11.6 GENERAL INSPECTION PRACTICES AND PROCEDURES.

- 11.6.1 Trip records inspections are usually conducted at the operator's principal base of operations.
- 11.6.2 Some operators have established a system where line stations forward all trip record information to one central location where the information is retained for the required time period.
- 11.6.3 Some operators have most of their trip record information stored in a computerized format.
- 11.6.4 Inspectors should use the following general, procedural guidelines when conducting an inspection of an operator's trip records.

11.6.5 PREPLANNING INSPECTION

- 11.6.5.1 Before conducting the actual inspection, inspectors should familiarize themselves with the operator's trip records procedures, formats, and means of disseminating information to flight crews.



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- 11.6.5.2 Inspectors should pre plan the inspection by deciding which specific areas should be concentrated upon, such as listing alternate airports, accurate fuel loads, flight release time versus actual block-out time, and accurate and timely weather information.

11.6.6 INITIAL CONTACT WITH OPERATOR

- 11.6.6.1 Inspectors should contact the operator's personnel responsible for maintaining trip record files and advise them that an inspection shall be conducted.
- 11.6.6.2 Upon arriving at the record keeping location, the inspector should properly identify one's self and request records for a specific series of trips.
- 11.6.6.3 If an operator uses electronic records, it is important that the inspector become familiar with the system before conducting the surveillance.
- 11.6.6.4 This ensures that the operator has an effective means of storing record information and is capable of retrieving specific trip information at the DFSs request.
- 11.6.6.5 Inspectors should also request space at the operator's facility to conduct the inspection.

11.6.7 EXAMINATION OF DOCUMENTS

- 11.6.7.1 During the conduct of the actual inspection, inspectors should examine all of the available documents for each flight and cross check the information between the trip records.
- 11.6.7.2 For example, the fuel load on a dispatch release for a AOC holder should be the same as the fuel load on the load manifest, the flight plan, and the fuel slip within the operator's specified tolerance.

11.7 SPECIFIC INSPECTION PRACTICES AND PROCEDURES

- 11.7.1 For all trip records inspections, the inspector should, as a minimum, evaluate the operator's records for the following—

11.7.2 ACCURACY AND COMPLETENESS

- 11.7.2.1 Inspectors should ensure that each trip record package they examine contains all of the required information and also pertaining to the actual flight it represents.
- 11.7.2.2 Each document should have a flight number or a trip number and an aircraft identification number which clearly identifies the applicable flight.

11.7.3 AIRCRAFT WEIGHT INFORMATION

- 11.7.3.1 Each trip records package, regardless of the type of operator, must contain aircraft weight, balance (CG), and loading information.
- 11.7.3.2 Passenger and cargo weight information must be accurately reflected on the load manifest.

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- 11.7.3.3 When evaluating this information, inspectors should take into account the following:
- Many operators have approved systems which result in weight and balance "finals" being transmitted to the flight crew via air ground passive communication systems (ACARS) or company radio frequencies after the aircraft has departed the gate or ramp area.
 - This information, which normally consists of adjusted takeoff gross weight and trim settings, is critical to the crewmembers for the accurate determination of the takeoff data.
- 11.7.3.4 Load manifests must contain, as a minimum, two weight and balance notations—
- The maximum allowable takeoff weight
 - The actual takeoff gross weight for the particular flight

11.7.4 MINIMUM FUEL REQUIRED

- 11.7.4.1 Inspectors should examine AOC holder trip records to ensure that they include an annotation of the minimum fuel required to conduct the flight.
- 11.7.4.2 Operators will provide a breakdown of fuel loads, such as trip fuel, alternate fuel, reserve fuel, and holding fuel.
- 11.7.4.3 When examining fuel figures, inspectors should cross check the dispatch or flight release fuel quantity (or weight in pounds) with the load manifest fuel quantity (or weight in pounds) to ensure that the figures are the same.
- 11.7.4.4 Additionally, inspectors must ensure that the operator's flight plan includes the amount of fuel on board (in hours), and that this figure matches, within the operator's allowable tolerance, the fuel figures shown on the flight release and the load manifest.

11.7.5 FLIGHT RELEASE INFORMATION

- 11.7.5.1 A domestic operator to issue a release if the flight is delayed for more than 3 hours from the intermediate airport—
- To ensure that the operator is re-releasing flights as required, inspectors should determine the actual departure times from company logs, ATC tower logs, or some other means, and then compare those times with the dispatch or flight release times (as applicable).
 - The best time to review this requirement is during operations in adverse weather conditions.



APPENDIX 11-A

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Air Operator Operations and Flight Records Checklist/Report
CAA/OP/CL/057

S=Satisfactory; U=Unsatisfactory; N=Not Observed; NA=Not Applicable

Operator	Date	Location	Inspector

<p>A. GENERAL</p> <p>1.____ Availability</p> <p>2.____ Practicality</p> <p>3.____ Currency</p> <p>4.____ Legibility</p> <p>5.____ Accuracy</p> <p>6.____ Conformity</p> <p>B. FLIGHT PLAN</p> <p>1.____ Contains the Following Elements:</p> <ul style="list-style-type: none"> Type Aircraft Aircraft Registration Flight No. PIC Name Point of Departure Proposed Route, Cruising Altitude, and TAS Minimum Flight Altitude & Aerodrome Operating. Minima ETA Amount of Fuel on Board (in Hours) Alternate Airport (if required) Numbers of Persons on Board 	<p>DISPATCH/FLIGHT RELEASE</p> <p>1.____ Contains the Following Elements:</p> <ul style="list-style-type: none"> Aircraft Identification No. Trip or Flight Number Departure Airport Intermediate Stops Type of Operation (IFR or VFR) Minimum Fuel Required Weather Report and Forecasts <p>LOAD MANIFEST</p> <p>1.____ Contains the following Individual Weight:</p> <ul style="list-style-type: none"> Aircraft Fuel and Oil Cargo and Baggage Passengers Crew <p>2.____ Contains Maximum Allowable T/O Weight in Consideration Of:</p> <ul style="list-style-type: none"> Runway Limits Climb Limits Enroute Performance Limits Landing Weight Alternate Distance 	<p>3.____ Reflects Total Takeoff Weight</p> <p>4.____ Reflects Load Distribution and CG Limits</p> <p>AIRWORTHINESS RELEASE</p> <p>1.____ Certifies Following Conditions Have Been Met</p> <ul style="list-style-type: none"> Work Performed on Aircraft IAW Operator's Manual Completed Items Inspected by Authorized Individual Aircraft is Airworthy and in Condition for Safe Operation <p>F. OTHER REQUIRED DOCUMENTS</p> <p>1.____ Weather Reports, Forecasts, Summaries, and Depictions</p> <p>2.____ Fuel Slips</p> <p>3.____ NOTAMs</p> <p>4.____ Other</p>
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REMARKS (Continue on back if necessary):

OVERAL RESULT:

Satisfactory ☐

Unsatisfactory ☐

INSPECTOR'S SIGNATURE



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Chapter 12 – ISSUANCE OF AIR OPERATOR CERTIFICATE

12.1 GENERAL

12.1.1 Inspectors shall be guided by SLCAP 4100 when conducting Inspections for the Initial Issuance of AOC and for renewal for such certificate.

12.1.2 The Organizations structure inspection shall be conducted to ensure that the operator has technically suitable persons to conduct the applicants' requirements.

12.1.3 These AOC holders must meet the same minimum requirements during the subsequent of an inspection as they do for original certification.

12.1.4 MAIN BASE INSPECTION

12.1.4.1 A Main Base inspection is usually conducted at the operator's main place of business. In some cases, operators may elect to retain selected records at different locations, such as at an office located in a residence, at an office building, or in portable files. The locations may differ as widely as the operators' activities differ.

12.2 PLANNING A MAIN BASE INSPECTION

12.2.1 The method used to conduct a Main Base inspection depends on the organizational structure of the operator at a specific location as identified in the organization Database.

12.2.2 SURVEILLANCE ACTIVITIES

12.2.2.1 The size and complexity of the operations at a particular location will dictate which surveillance items are to be examined during a operations structure inspection.

12.2.2.2 An operations structure inspection may be completed over several days or during a single visit and may often be conducted in conjunction with a proficiency or competency check.

12.2.2.3 When possible, airworthiness and operations inspectors should jointly conduct operations structure inspections.

12.2.3 FREQUENCY

12.2.3.1 The frequency of operations structure inspections for an operator is determined by the number of aircraft and personnel employed by the operator and by the complexity of the operation.

12.2.3.2 Operations structure inspections are usually conducted as part of the MRAI (Minimum Required Annual Inspection) work programme.

12.2.3.3 Additional inspections may be initiated by CAASL in response to complaints or special emphasis items.

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12.3. INSPECTION PREPARATION

12.3.1 REVIEW FILES

12.3.1.1 Prior to conducting an operations structure inspection, the inspector should review the AOC holder's file to refresh his memory with the following information—

- a. Current and appropriate AOC
- b. Current and appropriate operations specifications (Ops Specs)
- c. General correspondence with the operator
- d. Previous inspections and proficiency check records for possible problem areas, accident history, violation history
- e. Any applicable manuals

12.3.2 NOTIFICATION OF INSPECTION

12.3.2.1 The inspector should notify the operator to arrange a time when the appropriate personnel and aircraft will be available for the inspection.

12.3.2.2 Notification is important if the inspector plans to interview company personnel.

12.3.2.3 In some cases, notification may be necessary for the inspector to locate some operators, such as single operators or other small operators.

12.4 CONDUCT OF INSPECTION

12.4.1 The strategy used by an inspector for accomplishing a operations structure inspection depends on the size and complexity of the operator.

12.4.2 Because operators conduct business in a variety of ways, it is not necessary to identify each item that must be examined during a operations structure inspection.

12.4.3 To complete an operations structure inspection, inspectors should examine, as a minimum, the items that follow.

12.4.4 STATION FACILITY INSPECTIONS

12.4.4.1 Each aerodrome which the operator intends to use must be inspected prior to the first revenue flight to that aerodrome, in order to ensure that the operator has the organization, facilities and staffing to handle his aircraft at that destination. Station facility inspections may be accomplished during proving flights. However, if no proving flight is scheduled to a proposed operator destination, the CAA and the operator must make arrangements to travel to and inspect that facility by another means. Information on station facility inspections along with the appropriate checklist/ report form is contained in this manual.



12.4.5 EMERGENCY EVACUATION DEMONSTRATION.

12.4.5.1 In order to demonstrate that the airplane seating configuration, location and operation of emergency exits, and crew training and procedures will permit a successful evacuation of passengers in an emergency situation, the applicant will have to perform an emergency evacuation demonstration, prior to issuance of an AOC, for each aircraft type which he intends to operate.

12.4.6 DITCHING DEMONSTRATION

12.4.6.1 The applicant must demonstrate competency in removing and launching life rafts or slide-rafts and in the use of emergency and survival equipment contained in those rafts.

Note: For ditching and emergency evacuation demonstration CAA Inspectors may accept the Demonstrations conducted by the Manufacture for the State of the Manufacturer during the Type Certification process. In such a case CAA may decide not to carry out a demonstration.

12.4.7 PROVING FLIGHTS.

12.4.7.1 As a final demonstration that he has the proper organization, facilities, equipment and training to successfully carry out revenue flights, the applicant will be required to perform a series of proving flights in accordance with the guidance contained in this manual.

12.4.8 AIR OPERATOR CERTIFICATE

12.4.8.1 The inspector should examine the operator's original Air Operator's Certificate, particularly the date and certificate number, and determine whether or not it matches the office copy.

12.4.8.2 If the original operating certificate is not available, the inspector should determine its location and schedule a time to inspect it.

12.4.9 OPERATIONS SPECIFICATIONS

12.4.9.1 The inspector should review the operator's current Ops Specs and ensure that the issue date is the same as that of the CAASL's copy.

12.4.9.2 Single pilot operators are not required to have a manual, although some may elect to have one.

12.4.9.3 A basic air taxi operator may not have all the required parts of a manual if the CAASL has granted to the operator a deviation from this requirement.

12.4.9.4 If the original Ops Specs are not available, the inspector should determine their location and schedule a time to inspect them.



12.4.9.5 ISSUANCE OF THE AOC AND OPERATIONS SPECIFICATIONS

12.4.9.5.1 GENERAL

12.4.9.5.1.1 Properly conducted and documented, the assessment and inspection programme outlined in the foregoing chapters will enable the CAA to determine if the applicant has fulfilled all technical safety and regulatory requirements for the issuance of an AOC. The programme will have provided specific information related to:

- a. The scope of the applicant's proposed operation.
- b. The adequacy of the organization and resources.
- c. The adequacy and effectiveness of company policies, directives operating instructions and procedures prescribed by the applicant to be followed by the personnel in the conduct of the operation and
- d. The applicant's willingness and ability to implement the State's operating regulations and rules applicable to the proposed operation.

12.4.9.5.1.2 It will also reveal any deficiencies related to the operation and recommend to the Director General of Civil Aviation that the applicant is either.

- a. Properly equipped and capable in all respect of conducting the proposed operation safely, efficiently and reliably in accordance with the AOC's operations specifications or limitations, or
- b. Is not, or is not yet pending correction of specified deficiencies), capable of conducting the proposed operation in an acceptable manner.
- c. In those cases where the application is successful, the CAASL will prepare an Air Operator Certificate. Operations specifications and limitations, which will be applicable to the certificate, will also be prepared for the operator.

12.4.9.5.1.3 Should the applicant be considered not yet capable of conducting the proposed operation in the required manner, an AOC will not be issued and the applicant will be so advised by letter, indicating the reasons for the lack of approval.

12.4.9.5.2 ISSUANCE OF THE AIR OPERATOR CERTIFICATE

12.4.9.5.2.1 Provided that the Director General is satisfied with the reports of the CAA inspectors and has determined that there is no economic or legal bar to the associated operations specifications.

12.4.9.5.2.2 There are four difference types of authorizations for an AOC that an operator could be approved for, they are:

- a. Private Operations
- b. Aerial Work Operations
- c. Charter Operations
- d. Regular Public Transport Operations (Domestic or International)



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12.4.9.5.2.3 In accordance with the example contained in Figure 4-1 at the end of this chapter, the AOC will contain or make reference to the following information:

- a. Operator's identification (name, location).
- b. Date of issue and period of validity.
- c. Description of the types of operations authorized.
- d. The type(s) of aircraft authorized for use and
- e. Authorized areas of operation and routes.
- f. Any other pertinent information/ limitations and conditions.

12.4.9.5.2.4 When the AOC is issued the operator should be provided at the same time with officially authenticated copies of the approved operations specifications. The operator should also be advised as to the procedure to prepare and process future requests for amendments of operations specifications.

12.4.9.5.2.5 Once the operator has received the AOC and the approved operations specifications, the operator may inaugurate the flight operations authorized. Therefore, the operator may inaugurate the flight operations in full compliance with these authorizations and the applicable provisions of the Air Navigation. From that moment, the CAA will establish a continued surveillance on the operator to ensure that the required standards of operation are maintained, in accordance with Volume 3 of this manual.

12.4.9.5.3 Procedure for the ACCEPTANCE of a Special Operation authorization application (Operations Specification)

- a. PURPOSE: To determine the acceptability of a new application for an operations specification.
- b. CIRCUMSTANCES OF USE: Whenever an air operator submits an application to add an operation specification to the AOC
- c. REFERENCE CRITERIA: IS 13 2.1
- d. COORDINATION: The application will be jointly reviewed by Flight operations and Airworthiness inspectors
- e. TASK TO PERFORM: Verify the application package to ensure that it contains:
 - ☐ Evidence of the aircraft capability as indicated in the aircraft certification documents and aircraft manuals;
 - ☐ Amendment proposals relevant parts of the CAMO exposition manual and Maintenance programme appropriate to support the intended additional operation;
 - ☐ The maintenance technician training programme, if applicable;

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- ☐ Amendment proposals relevant parts of the operations manual for the addition of appropriate operating procedures;
- ☐ The flight crew training programme, if applicable;
- ☐ Amendment proposal to the dispatch procedures, if applicable;
- ☐ Amendment proposal to the flight dispatcher training programme, if applicable; and
- ☐ Flight Operation Safety Assessment (FOSA) if applicable. If one or more required elements has not been submitted, FSR will, in writing, inform the applicant that (1) the submitted package is incomplete and (2) cannot be processed until the complete application package is submitted; If the package is complete, FSSD will acknowledge reception of the package in writing indicating that the application has been *accepted* and will be processed;

12.4.9.5.4 Procedure for the verification and APPROVAL of special operation authorization application (Operations Specifications)

- a. **PURPOSE:** To assess whether the applicant has satisfied all the requirements applicable to the OPS SPEC applied for.

NOTE: *This is a general procedure and there might be cases where the applicable requirements outline additional elements not covered in this procedure. In such a case, inspectors are responsible to verify those additional elements and to report them manually in the associated checklist.*

- b. **CIRCUMSTANCES OF USE:** Whenever an air operator submits an application to add an operation specification to the AOC.
- c. **REFERENCE CRITERIA:** IS 13 2.1
- d. **COORDINATION:** Flight operations and Airworthiness
- e. **TASK TO PERFORM:** Verify each document submitted by the operator against the applicable regulation or requirement to ensure compliance with all applicable requirements.

The verification will be performed for each of the following documents according to their applicability in relation to the authorization sought:

- ☐ Aircraft capability evidence;
- ☐ CAMO exposition manual amendment;
- ☐ Maintenance programme amendment;
- ☐ Maintenance technician training programme;
- ☐ Operations Manual Part A amendment;
- ☐ Operations Manual Part B amendment

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- ☐ MEL amendment
- ☐ Operations Manual Part C amendment;
- ☐ Operations Manual Part D amendment;
- ☐ Dispatch Manual or procedures amendment;
- ☐ Dispatcher training programme;
- ☐ Flight Operation Safety Assessment, etc.;

12.4.10 OPERATIONS MANUAL

- 12.4.10.1 If the operator has either partial or full manuals that provide guidance for flight or ground personnel, the inspector should complete an inspection of the manuals, as applicable.
- 12.4.10.2 When the operator does not have a manual, or when there is only a part of a manual, the inspector should determine whether or not the operator has deviation authority by Ops Specs.
- 12.4.10.3 The inspector should determine whether or not manual procedures are being followed by interviewing operator personnel or by observing employees in the performance of their duties.

12.4.11 RECORDS

- 12.4.11.1 The inspector should conduct the following records inspections by using the applicable guidance provided in this volume—
- 12.4.11.1.1 Flight Preparation records
 - 12.4.11.1.2 Flight and duty time records
 - 12.4.11.1.3 Training records
 - 12.4.11.1.4 Operations records

12.4.12 AIRCRAFT

- 12.4.12.1 If practical, the inspector should examine, during an operations structure inspection, the aircraft used by the operator. In addition to inspecting the aircraft to determine whether or not it is in airworthy condition, the inspector should examine the following items for compliance—
- 12.4.12.1.1 Airworthiness certificate and registration
 - 12.4.12.1.2 Airplane limitations and required placards
 - 12.4.12.1.3 Approved aircraft flight manual (AFM) or company flight manual (CFM) carried on board
 - 12.4.12.1.4 Empty weight and centre of gravity (CG) calculated
 - 12.4.12.1.5 Instruments and equipment
 - 12.4.12.1.6 Operable required equipment (unless an airworthiness directive (AD) provides otherwise)
 - 12.4.12.1.7 The approved minimum equipment list (MEL) and its use as authorised by the Ops Specs (if applicable)
 - 12.4.12.1.8 Aircraft records available for inspection

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12.5 DEBRIEFING

12.5.1 The inspector should plan to debrief the operator as part of the operations structure inspection. Quite often the operator may have participated directly in the inspection and may have the capability to make corrections quickly.

12.5.2 The following debriefing points apply—

12.5.2.1 The debriefing should include both compliance and noncompliance areas. If a potential violation is involved, the inspector should advise the operator that a safety resolution will be raised and a letter of investigation (LOI) may follow.

12.5.2.2 The inspector must be clear when indicating any areas which the operator must correct before further operations can be conducted.

12.5.2.3 The inspector should advise the operator that a formal letter containing a listing of the discrepancies will be sent to the operator and made part of the permanent file.

12.6 FUTURE ACTIVITIES

12.6.1 By conducting operations structure inspections, the CAASL is able to maintain a comprehensive review of an operator's business conduct and its compliance with the regulations.

12.6.2 These inspections often result in findings which generate follow up action. If the findings warrant such action, the inspector should implement the following corrective measures—

12.6.2.1 Surveillance to verify the operator's correction of discrepancies

12.6.2.2 An adjustment of the operator's planned work programme

12.6.2.3 The initiation of an enforcement investigation report, if applicable.

Note: During the Initial Certification of the Operator the CAASL Inspectors will be guided by Appendix D of SLCAP 4100.



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APPENDIX 12-A
CAA/OP/CL/61

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Air Operator Station Facility Inspection Checklist/Report

S=Satisfactory; U=Unsatisfactory; N=Not Observed, NA=Not Applicable

Operator	Location	Date	Aircraft Type(s) (List)
Management and Supervisory Personnel (List):	Name: Name: Name:	Title: Title: Title:	Inspector

<p>A. PERSONNEL</p> <p>1. ___ Adequacy of Staffing</p> <p>2. ___ Competence</p> <p>B. MANUALS</p> <p>1. ___ Available</p> <p>2. ___ Current</p> <p>3. ___ Adequate Information</p> <p>___ Refuelling Procedures</p> <p>___ Aircraft Towing & Movement</p> <p>___ Weight and Balance</p> <p>___ Operation of GSE</p> <p>___ AFM and Performance</p> <p>___ Training Requirement</p> <p>___ Emergency Phone List</p> <p>___ Accident/Incident Procedures</p> <p>___ Security</p> <p>___ Server Weather</p> <p>___ Carry- on Baggage</p> <p>___ Hazardous Material</p> <p>___ Contract Services</p> <p>___ Trip Records Disposition</p> <p>C. RECORDS</p> <p>1. ___ Trip</p> <p>2. ___ Crew and Duty Time</p> <p>3. ___ Communications</p>	<p>D. TRAINING</p> <p>1. ___ Duties and Responsibilities</p> <p>2. ___ Hazardous Materials</p> <p>3. ___ Passenger Handling</p> <p>4. ___ Load Planning</p> <p>5. ___ Aircraft Servicing</p> <p>6. ___ First Aid and Emergency Action</p> <p>7. ___ Communication</p> <p>E. FACILITY EQUIPMENT AND SURFACE</p> <p>1. ___ Ramp Area</p> <p>2. ___ Passenger Movement</p> <p>3. ___ Lighting</p> <p>4. ___ Hazards/Obstructions</p> <p>E. CONFORMANCE</p> <p>1. ___ CAR's</p> <p>2. ___ Operator's Directives</p> <p>G. FLIGHT CONTROL</p> <p>1. ___ Flight Planning</p> <p>2. ___ Load Planning</p> <p>3. ___ Weather</p> <p>4. ___ NOTAMs</p>	<p>H. SERVICING</p> <p>1. ___ Loading</p> <p>2. ___ Logbook/MEL Entries</p> <p>3. ___ Fuelling</p> <p>4. ___ Oil/Hydraulic Services</p> <p>5. ___ Potable water Services</p> <p>6. ___ De-icing</p> <p>7. ___ Marshalling</p> <p>8. ___ Chocks/Mooring</p> <p>I. MANAGEMENT</p> <p>1. ___ Communication</p> <p>2. ___ Contract Services</p> <p>3. ___ Contingency Planning</p> <p>J. SECURITY</p> <p>1. ___ Passenger Screening</p> <p>2. ___ Baggage and Cargo Screening</p> <p>3. ___ Limited Access Areas</p> <p>K. AERODROME</p> <p>1. ___ Fire Fighting Equipment</p> <p>2. ___ Medical Services</p> <p>3. ___ Ramp</p>
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REMARKS (Continue on back necessary):	
OVERAL RESULT: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory	INSPECTOR'S SIGNATURE



Appendix 12-B

CAA/OP/CL/.....

Verification checklist for the ACCEPTANCE of a Special Operation authorization application (Operations Specification)

Date: _____

Applicant

Air Operator: _____

File No.: _____

(Insert additional information as required)

No.	Requirement	S	U	N/ A
1	Aircraft capability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	CAMO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Maintenance programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Maintenance technician training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	OM amendment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Flight crew training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Dispatch procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Dispatch training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Flight Operation Safety Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector comments:				
Recommendation:				
Inspector Signature:		Date:		
Chief, FSR Signature:		Date:		



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Chapter 13 - OPERATIONAL CONTROL

13.1 GENERAL POLICY

- 13.1.1 The information in this chapter should be used by operations inspectors when planning, conducting, and reporting on operational control inspections.
- 13.1.2 Operational control inspections are applicable to all AOC holders, with specific emphasis on those operating large and/or commuter flights.
- a. AOC holders. The inspection of the operational control function of these AOC holders is accomplished during a operations structure inspection.
 - b. Inspection of Operational Control Functions at Line Stations. An operational control inspection is conducted at the facility where the operator authorizes or releases flights. Operators commonly perform limited operational control functions at line stations, but they may not authorize or release flights at these locations. The line station portion of operational control functions is inspected during station facilities inspections.

13.2 OBJECTIVES

- 13.2.1 An operational control inspection has two primary objectives.
- 13.2.1.1 The first objective is for the inspector or team to ensure that the operator is in compliance with the minimum requirements of the ANR and the operations specifications (Ops Specs).
- 13.2.1.2 The second objective is to ensure that the operator's system of control provides positive assurance of public safety. The operator must meet both objectives to obtain and retain an operating certificate.
- 13.2.2 To make this determination, the inspector or team must evaluate the operator to ensure that the following criteria are met:
- a. Responsibility for operational control is clearly defined
 - b. An adequate number of operational control personnel are provided
 - c. Applicable manuals contain adequate policy and guidance to allow operational control personnel and flight crews to carry out their duties efficiently, effectively, and with a high degree of safety
 - d. Operational control personnel are adequately trained, knowledgeable, and competent in the performance of their duties
 - e. Flight control personnel and flight crews have been provided with the necessary information for the safe planning, control, and conduct of all flights
 - f. The operator provides adequate facilities
 - g. The operator performs all operational control functions required by the regulations
 - h. The operator performs all functions necessary to provide adequate operational control in the environment in which the operations are conducted
 - i. Adequate emergency procedures and contingency plans have been formulated

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13.3 PRACTICES AND PROCEDURES

13.3.1 Inspectors conduct operational control inspections through systematic manual reviews, records inspections, observations, and interviews.

13.3.2 INSPECTOR PREPARATION AND MANUAL REVIEW

13.3.2.1 Inspectors should become familiar with the operational control sections of the operator's Ops Manual, Part A.

13.3.2.2 This manual review is both the first step in the inspection process and preparation for subsequent steps.

13.3.2.3 The checklists for the various aspects of the inspection contain the topics which should be included in the operator's manuals. Inspectors should use the checklist located at the end of this section to determine if the necessary topics are covered and to determine if the contents of the operator's manual are acceptable.

13.3.3 RECORDS CHECKS, INTERVIEWS, AND OBSERVATIONS

13.3.3.1 The inspector should establish with the operator a mutually convenient time for conducting the records checks and interviews.

13.3.3.2 Inspectors must conduct interviews with both management and working level personnel to meet inspection objectives. Inspectors should plan these interviews so that the required information can be obtained without distracting personnel from their duties and responsibilities. To prevent intruding into actual operations, the inspector should, if possible, conduct these interviews privately and away from the flight control centre.

13.3.3.3 Inspectors must observe actual flight release operations. Before beginning these observations, an inspector should request a tour of the operator's facility for orientation, during which the inspector should observe a number of different people at work. The inspector should ask questions; however, care must be taken not to distract or interfere with the individuals in the performance of their assigned duties. An effort should be made by the inspector to make observations during periods of peak activity, adverse weather, or during non-routine operations.

FOIs of large operators should arrange to have these observations conducted at random times throughout the year, preferably in periods of inclement weather.

13.3.3.4 Inspectors should observe competency checks being conducted to evaluate the knowledge level of persons involved in operational control and the performance of the supervisor.



13.4 OPERATIONAL CONTROL REVIEW AREAS

13.4.1 In addition to the checklist at the end of this evaluation guidance, the following guidance is provided for training and consideration—

13.4.2 AUTHORISED OPERATIONS

13.4.2.1 Are the operations that may and may not be conducted according to the Ops Specs (including areas of operation) clearly specified?

13.4.2.2 Are there clear definitions of types of operations authorized? Are there clear definitions of the rules under which each of these operations is conducted?

13.4.2.3 Are the applicable regulations identified and the operator's policies applicable to each type of operation clearly stated?

13.4.2.4 Are the topics listed on this checklist adequately covered?

13.4.2.5 Is the applicable section of the Ops Manual, Part A readily available to operational control persons and flight crews while they perform their duties?

13.4.2.6 Is the copy of the operator's Ops Manual, Part A that is available to operational control persons or flight crews current?

13.4.3 ORIGINAL RELEASE

13.4.3.1 Are the conditions clearly stated under which a flight may and may not be dispatched?

13.4.3.2 Are the conditions stated under which a flight must be rerouted, delayed, or cancelled?

13.4.3.3 Does the flight release contain all the required elements?

13.4.3.4 Are limitations required in the remarks of the release?

13.4.3.5 Is a written copy of weather reports and forecasts (including PIREPs) and NOTAMs attached to the release and provided to the flight crew?

13.4.4 RESPONSIBILITY FOR PREDEPARTURE FUNCTIONS

13.4.4.1 Are the responsibility and procedures for accomplishing the following functions clearly specified?

- a. Crew assignment
- b. Load planning
- c. Aircraft routing
- d. Flight planning
- e. Release of the aircraft from maintenance
- f. Control of MEL and CDL limitations
- g. Weight and balance



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13.4.4.2 Have adequate procedures for cross checking and verifying these activities been established?

13.4.4.3 Is each of these procedures effective?

13.4.4.4 What means has the operator established for the PIC and operational control person to ensure that each of these functions has been satisfactorily accomplished before the aircraft departs?

13.4.5 PILOT BRIEFING

13.4.5.1 How do the operator's procedures provide for briefing of the PIC by the operational control person?

13.4.5.2 Is the minimum content of the briefing specified and adequate?

13.4.5.3 How are the signatures of both the PIC and the operational control person on the dispatch release accomplished?

13.4.5.4 Is the PICs obligation to operate the flight according to the release, or to obtain an amended release, clearly stated?

13.4.6 FLIGHT FOLLOWING

13.4.6.1 Are the operational control persons' flight following requirements and procedures clearly stated?

13.4.6.2 Is policy and guidance provided to flight crews and operational control persons for monitoring fuel En-route.

13.4.6.3 Are flight crew reporting requirements and procedures clearly stated?

13.4.6.4 Are there specified procedures for operational control persons to follow when a required report is not received?

15.4.6.5 Is a record of communications made and retained?

13.4.7 INABILITY TO PROCEED AS RELEASED

13.4.7.1 Is a policy stated concerning the PICs latitude to deviate from a dispatch release without obtaining a new release?

13.4.7.2 Is there specific and adequate direction and guidance to PICs and operational control persons for the actions to take when a flight cannot be completed as planned (such as destinations or alternates below minimums, runways closed or restricted)?

13.4.7.3 Are procedures to follow specifically and clearly stated in case of diversion or holding?

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13.4.8 WEATHER

- 13.4.8.1 Does the operator obtain weather reports from an approved source?
- 13.4.8.2 Are forecasts based on approved weather reports?
- 13.4.8.3 Does the operator have a weather forecasting? Are procedures for making flight movement forecasts clearly specified? Are those individuals authorized to make a flight movement forecast clearly specified? Are other individuals specifically prohibited from making flight movement forecasts?
- 13.4.8.4 Does the operator have an adverse weather system?
- 13.4.8.5 Does the operator have adequate procedures for providing the latest available weather reports and forecasts to flight crews while the flight is en-route?
- 13.4.8.6 Does the operator have adequate procedures for updating weather information when the aircraft is delayed on the ground?

13.4.9 WEATHER MINIMUMS

- 13.4.9.1 Is release under VFR authorized by the Ops Specs?
- 13.4.9.2 If so, has the forecast and actual weather allowed VFR flight to destination on those flights so released?
- 13.4.9.3 Have turbojet aircraft been released under VFR?
- 13.4.9.4 What IFR departure minimums are authorized by the Ops Specs?
- 13.4.9.5 When flights are released with the departure airport below landing minimums, are takeoff alternates named on the dispatch release?
- 13.4.9.6 What destination weather minimums are authorized?
- 13.4.9.7 What weather minimums are authorized for "high minimums" captains?
- 13.4.9.8 How does the operator ensure compliance with the Ops Specs (operable centreline lighting and 15% additional runway for turbojet operations for operations below 300 and 3/4)?
- 13.4.9.9 When a flight is released to a destination below CAT I minimums, is that airplane type authorized at CAT II or CAT III operations at that location according to the Ops Specs?
- 13.4.9.10 When destination alternates are required, are they named on the dispatch release?
- 13.4.9.11 Is the weather at the named alternate airport equal or better than that required by the Ops Specs?
- 13.4.9.12 Is "marginal" defined for the designation of two alternates on the dispatch release?



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13.4.9.13 Are two alternates designated when required?

13.4.9.14 How does the operator ensure that operational control persons are aware of these limitations before dispatching a flight?

13.4.9.15 Do weather forecasts from the trip records show that these limits have been complied with for dispatch?

13.4.10 **SELECTION OF ALTERNATES**

13.4.10.1 Is policy, direction, and guidance provided for the selection of alternates?

13.4.10.2 Is terrain and engine-out performance (drift-down) considered in the alternate selection?

13.4.11 **NOTAMS**

13.4.11.1 Is the required NOTAM information provided (Class I, Class II, and Local)?

13.4.12 **INFORMATION**

13.4.12.1 What provisions does the operator make for supplying airport and navigation information?

13.4.12.2 What means does the operator use to comply with the requirement for an airport data system? Is it adequate?

13.4.12.3 Are flight crews provided with written flight plans for monitoring flight progress and fuel burn?

13.4.12.4 How does the operator provide data to operational control persons on takeoff and landing minimums at each airport?

13.4.12.5 Do operational control persons have immediate access to such data?

13.4.12.6 Are provisions made for nonstandard operations, such as inoperative centreline lighting?

13.4.13 **FUEL**

13.4.13.1 Are all the required increments of fuel provided (start and taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, 45 minutes of reserve, and contingency fuel)?

13.4.13.2 Are the operator's policies concerning contingency fuel adequate for the environment in which operations are conducted?

13.4.13.3 Are there minimum fuel procedures specified for both operational control persons and PICs?

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13.4.13.4 When aircraft are dispatched without an alternate, is adequate contingency fuel carried for un forecast winds, terminal area delays, runway closures, and contingencies?

13.4.14 **EMERGENCY PROCEDURES.**

13.4.14.1 Are emergency action procedures and checklists published and readily available for the following emergencies?

- a. In-flight Emergency
- b. Crash
- c. Overdue or missing aircraft
- d. Bomb threat
- e. Hijacking

13.4.15 **CHANGEOVER PROCEDURES**

13.4.15.1 Is an adequate overlap provided for the operational control person being released to brief the oncoming operational control person on the situation?

13.4.16 **TRIP RECORDS**

13.4.16.1 Are the required trip records carried to destination

13.4.16.2 Are trip records retained for 30 days?

13.5 **OPERATIONAL CONTROL PERSONS**

13.5.1 **QUALIFICATION**

13.5.1.1 Are all operational control persons certified?

13.5.1.2 Have all operational control persons successfully completed a competency check within the eligibility period?

13.5.1.3 Have all operational control persons completed route familiarization within the preceding 12 calendar months? How does the operator ensure that operational control persons are currently familiar with the areas in which they work?

13.5.2 **KNOWLEDGE OF WEATHER**

13.5.2.1 Are operational control persons knowledgeable about the following weather conditions?

- a. Surface (fronts, fog, low ceilings, etc.)
- b. Upper Air (tropopause, jet streams)
- c. Turbulence (pressure and temperature gradients)
- d. Severe (low level wind shear, microburst, icing, thunderstorms, Volcanic Ash etc.)

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13.5.2.2 Can operational control persons read a terminal report, forecast accurately and interpret the meanings?

13.5.2.3 Can operational control persons read various weather depiction charts and interpret the meanings?

13.5.2.4 Can operational control persons read upper air charts and interpret the meanings?

13.5.3 KNOWLEDGE OF THE AREA

13.5.3.1 Do operational control persons immediately recognize the airport identifiers for the airports in the area in which they are working?

13.5.3.2 Are operational control persons generally familiar with the airports in the area in which they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)?

13.5.3.3 Are operational control persons aware of which airports, in the areas in which they are working, are special airports, and why?

13.5.3.4 Are operational control persons aware of the terrain surrounding the airports in the areas in which they are working?

13.5.3.5 Are operational control persons aware of dominant weather patterns and seasonal variations of weather in the area?

13.5.3.6 Are operational control persons aware of route segments limited by drift down?

13.5.4 KNOWLEDGE OF AIRCRAFT AND FLIGHT PLANNING

13.5.4.1 Are operational control persons aware of the general performance characteristics of each airplane with which they are working (such as average hourly fuel burn, holding fuel, engine out, drift down height, effect of an additional 50 knots of wind, effect of a 4,000 foot lower altitude, crosswind limits, maximum takeoff and landing weights, required runway lengths)?

13.5.4.2 Can operational control persons read and explain all the items on the operator's flight plan?

13.5.5 KNOWLEDGE OF POLICY

13.5.5.1 Are operational control persons knowledgeable of the Ops Specs, particularly such items as authorized minimums?

13.5.5.2 Are operational control persons aware of the policies and provisions of the operator's manual as discussed under policies and procedures?

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13.5.6 KNOWLEDGE OF RESPONSIBILITIES

- 13.5.6.1 Are operational control persons knowledgeable of their responsibilities under the ANR Part (such as briefing PIC; cancelling, rescheduling, or diverting for safety; in-flight monitoring; In-flight notification of PIC)?
- 13.5.6.2 Are operational control persons knowledgeable of their responsibilities under the operator's manual as discussed in paragraph 1?
- 13.5.6.3 Are operational control persons aware of their obligation to declare emergencies?

13.5.7 PROFICIENCY

- 13.5.7.1 Are operational control persons competent in the performance of their assigned duties?
- 13.5.7.2 Are operational control persons alert for potential hazards?

13.5.8 DUTY TIME

- 13.5.8.1 Are the regulatory duty time requirements being complied with?

13.5.9 SUPERVISORS

- 13.5.9.1 Qualification. Are supervisors qualified and current as operational control persons?
- 13.5.9.2 Conduct of Checks. Are competency checks appropriate, thorough, and rigorous?

13.5.10 FACILITIES AND STAFF

- 13.5.10.1 Physical
- 13.5.10.2 Is enough space provided for the number of people working in the dispatch centre?
- 13.5.10.3 Are the temperature, lighting, and noise levels conducive to effective human performance?
- 13.5.10.4 Is the access to the facility controlled?

13.5.11 INFORMATION

- 13.5.11.1 Are operational control persons supplied with all the information they require (such as flight status, maintenance status, load, weather, facilities)?
- 13.5.11.2 Is the information effectively disseminated and displayed? Can information be quickly and accurately located without overloading the operational control person?
- 13.5.11.3 Are real time weather displays available for adverse weather avoidance?



13.5.12 COMMUNICATIONS

- 13.5.12.1 Can a operational control person establish rapid and reliable radio communications (voice or ACARS) with a captain when a flight is parked at the gate?
- 13.5.12.2 How much time does it take to deliver a message to an enroute flight and get a response?
- 13.5.12.3 Are direct voice radio communications available at all locations? Are they reliable? If communications facilities are shared with other airlines, does traffic congestion preclude rapid contact with a flight?
- 13.5.12.4 If hub and spoke operations are conducted, are there adequate communication facilities available to contact and deliver a message to all arriving flights within a 15 minute period?
- 13.5.12.5 Are backup communications links available in case of a failure of the primary links?

13.5.13 MANAGEMENT

- 13.5.13.1 Has overall responsibility for operations in progress been assigned to one individual who can coordinate the activities of all of the operational control persons?
- 13.5.13.2 Have procedures been established for coordinating with central flow control?
- 13.5.13.3 Have adequate internal communications links been established?

13.5.14 WORKLOAD

- 13.5.14.1 What method does the operator use to show compliance with the requirement to assign enough operational control persons during periods of normal operations and periods of non-routine operations?
- 13.5.14.2 Are the operator's methods adequate?
- 13.5.14.3 Do operational control persons have enough time to perform both dispatch and flight following duties in a reasonable manner?

13.6 POLICIES AND PROCEDURES.

13.6.1 AUTHORISED OPERATIONS

- 13.6.1.1. Are the operations that may and may not be conducted according to the Ops Specs, including areas of operation, clearly specified?

13.6.2 MANUALS

- 13.6.2.1 Is there a section of the Ops Manual, Part A in which the policy and guidance for operational control has been collected for the guidance of flight crews and flight followers?

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13.6.2.2 Are the topics listed on this checklist adequately covered?

13.6.2.3 Is the applicable section of the Ops Manual, Part A readily available to flight followers and flight crews while they perform their duties?

13.6.2.4 Is the operator's Ops Manual, Part A current?

13.6.3 ORIGINAL RELEASE

13.6.3.1 Are the conditions clearly stated under which a flight may and may not be released?

13.6.3.2 Are the conditions stated under which a flight must be rerouted, delayed, or cancelled?

13.6.3.3 Does the flight release contain all of the required elements?

13.6.3.4 Are limitations placed in the remarks?

13.6.3.5 What provisions are made for PICs and flight followers to obtain weather reports and forecasts (including PIREPs and NOTAMs)?

13.6.4 RESPONSIBILITY FOR PREDEPARTURE FUNCTIONS

13.6.4.1 Are the responsibilities and procedures clearly specified for accomplishing the following functions?

13.6.4.1.1 Crew assignment

13.6.4.1.2 Load planning

13.6.4.1.3 Aircraft routing

13.6.4.1.4 Flight planning

13.6.4.1.5 Release of the aircraft from maintenance

13.6.4.1.6 Control of MEL and CDL limitations

13.6.4.1.7 Weight and balance

13.6.4.2 Have adequate procedures been established for cross checking and verifying these activities?

13.6.4.3 Is each of these procedures effective?

13.6.4.4 What means has the operator established for the PIC and flight follower to ensure that each of these functions has been accomplished satisfactorily before the aircraft departs?

13.6.5 DUAL RESPONSIBILITY

13.6.5.1 How the concurrence of the flight follower is obtained before the PIC signs the release?

13.6.5.2 Is the PICs obligation to operate the flight according to the release or to obtain concurrence of the flight follower for an amended release clearly stated?



13.6.6 FLIGHT FOLLOWING

- 13.6.6.1 Are the flight follower's duties and procedures clearly stated?
- 13.6.6.2 Is policy and guidance provided to flight followers for monitoring flight movements?
- 13.6.6.3 Are flight following procedures effective?

13.6.7 INABILITY TO PROCEED AS RELEASED

- 13.6.7.1 Is a policy stated concerning the PICs latitude to deviate from the flight release without obtaining a new release?
- 13.6.7.2 Is there specific and adequate direction and guidance to PICs and flight followers for the actions to take when a flight cannot be completed as planned (such as destinations or alternates below minimums, runways closed or restricted)?
- 13.6.7.3 Are procedures to follow specifically and clearly stated in case of a diversion or holding?

13.6.8 WEATHER

- 13.6.8.1 Does the operator obtain weather reports from an approved source?
- 13.6.8.2 Are forecasts based on approved weather reports?
- 13.6.8.3 Does the operator have a weather forecasting system? Are procedures for making flight movement forecasts clearly specified? Is the privilege of making a flight movement forecast limited to meteorologists and specifically trained operational control persons? Are other individuals specifically prohibited from making flight movement forecasts? As part of the requirements for this system, does the flight follower have the capability to contact flights while they are en-route?
- 13.6.8.4 Does the operator have an adverse weather system?
- 13.6.8.5 Does the operator have adequate procedures for the flight crews to obtain the latest available weather report while the flight is en-route?
- 13.6.8.6 Does the operator have adequate procedures for updating weather information when the aircraft is delayed on the ground?

13.6.9 WEATHER MINIMUMS

- 13.6.9.1 Is release under VFR authorized by the Ops Specs?
- 13.6.9.2 If so, have the forecast and actual weather report allowed VFR flight to proceed to destination on those flights so released?
- 13.6.9.3 Have turbojet aircraft been released under VFR?

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- 13.6.9.4 What IFR departure minimums are authorized by the Ops Specs?
- 13.6.9.5 When flights are released with the departure airport below landing minimums, are takeoff alternates named on the flight release?
- 13.6.9.6 What destination weather minimums are authorized?
- 13.6.9.7 What weather minimums are authorized for "high minimums" captains?
- 13.6.9.8 How does the operator ensure compliance with the Ops Specs (operable centreline lighting and 15% additional runway for turbojet operations for operations below 300 and 3/4)?
- 13.6.9.9 When a flight is released to a destination below CAT I minimums, is that airplane type authorised for CAT II or CAT III operations at that location, according to the Ops Specs?
- 13.6.9.10 When destination alternates are required, are they named on the flight release?
- 13.6.9.11 Is the weather at the named alternate airport equal to or better than that required by the Ops Specs?
- 13.6.9.12 Is "marginal" defined for the designation of two alternates on the dispatch release?
- 13.6.9.13 Are two alternates designated when required?
- 13.6.9.14 How does the operator ensure that flight followers are aware of these limitations before concurring with the release of a flight?
- 13.6.9.15 Do weather forecasts from the trip records show that these limits have been complied with for dispatch?
- 13.6.10 **SELECTION OF ALTERNATES**
- 13.6.10.1 Are policy, direction, and guidance provided for the selection of alternates?
- 13.6.10.2 Are terrain and engine-out performance considered in alternate selection?
- 13.6.10.3 Is an alternate airport always designated?
- 13.6.11 **NOTAMS**
- 13.6.11.1 Is the required NOTAM information provided (Class I, Class II, and Local)?
- 13.6.12 **INFORMATION**
- 13.6.12.1 What provisions does the operator make for supplying airport and navigation information?



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13.6.12.2 What means does the operator use to comply with the requirement for an airport data system? Is it adequate?

13.6.12.3 Are flight crews provided with written flight plans for monitoring flight progress and fuel burn?

13.6.12.4 How does the operator provide data to flight followers on takeoff and landing minimums at each airport?

13.6.12.5 Do flight followers have immediate access to such data?

13.6.12.6 Are provisions made for nonstandard operations such as inoperative centreline lighting?

13.5.13 **FUEL**

13.6.13.1 Are all of the required increments of fuel provided (such as start and taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, 30 minutes of reserve, and contingency fuel)?

13.6.13.2 Are there minimum fuel procedures specified for both operational control persons and PICs?

13.6.13.3 Are the operator's policies concerning contingency fuel adequate for the environment in which operations are conducted?

13.6.14 **EMERGENCY PROCEDURES**

13.6.14.1 Are emergency action procedures and checklists published and readily available?

- a. In-flight Emergency
- b. Crash
- c. Overdue or missing aircraft
- d. Bomb threat
- e. Hijacking

13.6.15 **CHANGEOVER PROCEDURES**

13.6.15.1 Is an adequate overlap provided for the flight follower being released to brief the oncoming flight follower on the situation?

13.6.16 **TRIP RECORDS**

13.6.16.1 Are the required trip records carried to destination?

13.6.16.2 Are trip records retained for 30 days?

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13.7 FLIGHT FOLLOWERS

13.7.1 QUALIFICATION

- 13.7.1.1 What means does the operator use to comply with the requirement that flight followers are competent? Is the operator's method effective?
- 13.7.1.2 How does the operator ensure that flight followers are currently familiar with the areas in which they work?

13.7.2 KNOWLEDGE OF WEATHER

- 13.7.2.1 Are flight followers knowledgeable of the following weather conditions?
- 13.7.2.1.1 Surface (fronts, fog, low ceilings)
- 13.7.2.1.2 Upper Air (tropopause, jet streams)
- 13.7.2.1.3 Turbulence (pressure and temperature gradients)
- 13.7.2.1.4 Severe (low level wind shear, microburst, icing, thunderstorms)
- 13.7.2.2 Can flight followers read a terminal report, forecast accurately, and interpret the meanings?
- 13.7.2.3 Can flight followers read various weather depiction charts and interpret the meanings?
- 13.7.2.4 Can flight followers read upper air charts and interpret the meanings?

13.7.3 KNOWLEDGE OF THE AREA

- 13.7.3.1 Do flight followers immediately recognize the airport identifiers for the airports in the area in which they are working?
- 13.7.3.2 Are flight followers generally familiar with the airports in the area in which they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)?
- 13.7.3.3 Are flight followers aware of which airports, in the areas in which they are working, are special airports and why?
- 13.7.3.4 Are flight followers aware of the terrain surrounding the airports in the areas in which they are working?
- 13.7.3.5 Are flight followers aware of dominant weather patterns and seasonal variations of weather in the area?
- 13.7.3.6 Are flight followers aware of route segments limited by drift down?

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13.7.4 KNOWLEDGE OF AIRCRAFT AND FLIGHT PLANNING

- 13.7.4.1 Are flight followers aware of the general performance characteristics of each airplane with which they are working (such as average hourly fuel burn, holding fuel, engine-out drift down height, effect of an additional 50 knots of wind, effect of a 4,000 foot lower altitude, crosswind limits, maximum takeoff and landing weights, required runway lengths)?
- 13.7.4.2 Can flight followers read and explain all the items on the operator's flight plan?

13.7.5 KNOWLEDGE OF POLICY

- 13.7.5.1 Are flight followers knowledgeable of the Ops Specs, particularly authorized minimums?
- 13.7.5.2 Are flight followers aware of the policies and provisions of the operator's manual as discussed under policies and procedures?

13.7.6 KNOWLEDGE OF RESPONSIBILITIES

- 13.7.6.1 Are flight followers knowledgeable of their responsibilities under the applicable regulations?
- 13.7.6.2 Are flight followers knowledgeable of their responsibilities under the operator's manual?

13.7.7 PROFICIENCY

- 13.7.7.1 Are flight followers competent in the performance of their assigned duties?
- 13.7.7.2 Are flight followers alert for potential hazards?

13.8 FACILITIES AND STAFF

13.8.1 PHYSICAL

- 13.8.1.1 Is enough space provided for the number of people working in the flight following centre?
- 13.8.1.2 Are the temperature, lighting, and noise levels conducive to effective human performance?
- 13.8.1.3 Is access to the facilities controlled?

13.8.2 INFORMATION.

- 13.8.2.1 Are flight followers supplied with all the information they require (flight status,
- 13.8.2.2 maintenance status, load, weather, facilities)?



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13.8.2.3 Is information effectively disseminated and displayed? Can information be quickly and accurately located without overloading the flight follower?

13.8.2.4 Are real time weather displays available for adverse weather avoidance?

13.8.3 COMMUNICATIONS

13.8.3.1 Can a flight follower establish reliable communications with a PIC before release?

13.8.4 MANAGEMENT

13.8.4.1 Has overall responsibility for operations in progress been assigned to one individual who can coordinate the activities of all flight followers?

13.8.4.2 Have procedures been established for coordinating with central flow control?

13.8.4.3 Have adequate internal communications links been established?

13.8.5 WORKLOAD

13.8.5.1 What methods does the operator use to show compliance with the requirement to assign enough flight followers during periods of normal operations and periods of non-routine operations?

13.8.5.2 Are the operator's methods adequate?

13.8.5.3 Do flight followers have enough time to perform both release and flight following duties in a reasonable manner?



APPENDIX 13-A
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Air Operator Operational Control Inspection Checklist/Report – CAA/OP/CL/064

AIR OPERATOR OPERATIONAL CONTROL INSPECTION CHECKLIST/ REPORT

<i>Name of The Operator</i>		<i>Date</i>	
<i>Name of the Inspector</i>		<i>Location</i>	

REFERENCE – Annex 6 Part I Chapter 4.2 & Chapter 10, Is 019 & 013, DOC 8335, SLCAP 4200

Y = YES

N = NO

NS = NOT SEEN

NA = NOT APPLICABLE

<i>Check YES column if you reviewed the record, procedure or event and have no comment</i>
<i>Check NO column if you reviewed the record, procedure or event and have a comment</i>
<i>Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment</i>
<i>Check NOT APPLICABLE column if the line item is not required in this particular Operator</i>
<i>Make notes regarding a NO answer for resolution</i>

SECTION A					POLICIES AND PROCEDURES
Y	N	NS	NA	I	AUTHORIZED OPERATIONS
				1.1	The type of operations that may and may not be conducted should be clearly specified in manuals and other instructions (VFR, IFR, extended range, CAT II, etc.)
				1.2	Air Navigation Act and the operator's policies applicable to each type of operation should be clearly stated
				1.3	Geographic areas and destinations to which extended over water flights or extended range operations may be conducted should be clearly specified
Y	N	NS	NA	2	MANUALS
				2.1	A section of the Operations Manual should be devoted to the policy and guidance for operational control
				2.2	If the operator conducts extended over water or extended range operations, a separate section of the operations manual should contain key considerations regarding these types of operations
				2.3	The applicable section(s) of the Operations Manual should be readily available to dispatchers and flight crews while they perform their duties
Y	N	NS	NA	3	PRE DEPARTURE
				3.1	Crew assignment
				3.2	Load planning
				3.3	Aircraft routing
				3.4	Flight planning
				3.5	Release of the aircraft from maintenance
				3.6	Control of MEL and CDL limitations. Required instruments and equipment should be installed and operational
				3.7	Compliance with flight operations limitations
				3.8	Weight and balance
				3.9	Performance Planning, including consideration of mass, elevation, temperature, wind, obstacles, etc.



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				3.10	<i>Adequate procedures for supervising and verifying these activities should be established</i>
				3.11	<i>The operator should have a means for the PIC and dispatcher to ensure that each of these functions has been satisfactorily accomplished before the aircraft departs</i>
Y	N	NS	NA	4	ORIGINAL RELEASE
				4.1	<i>The conditions under which a flight may and may not be dispatched (type of operation, weather, crew compliment, load, etc.) should be clearly defined</i>
				4.2	<i>Cancelled should be defined</i>
				4.3	<i>The flight release should contain all the necessary elements (see Section 5.3</i>
				4.4	<i>A written copy of weather reports and forecasts (including PIREPS) and NOTAMS should be attached to the release and provided to the flight crew</i>
				4.5	<i>Extended over water or extended range operations should be conducted under instrument flight rules</i>
				4.6	<i>Flight should not be commenced unless it is ascertained by every reasonable means that airports to be used are adequate for the operation</i>
Y	N	NS	NA	5	DISPATCHER BRIEFING
				5.1	<i>The operator's procedures should provide for briefing of the PIC by the dispatcher</i>
				5.2	<i>The minimum content of the briefing should be specified and adequate</i>
Y	N	NS	NA	6	DUAL RESPONSIBILITY
				6.1	<i>The signatures of both the PIC and the Dispatcher should be required on the flight release</i>
				6.2	<i>The PIC's obligation to operate the flight according to the release, or to obtain an amended release, should be clearly stated</i>
Y	N	NS	NA	7	FLIGHT FOLLOWING
				7.1	<i>The dispatcher's flight following requirements and procedures should be clearly identified</i>
				7.2	<i>Policy and guidance should be provided to flight crews and dispatchers for monitoring fuel en-route</i>
				7.3	<i>Flight crew reporting requirements and procedures should be clearly stated</i>
				7.4	<i>There should be specified procedures for dispatchers to follow when a required report is not received</i>
				7.5	<i>The operator should maintain a record of communications between the dispatcher and the flight</i>
				7.6	<i>Procedures should be established to notify flights en route concerning hazardous conditions relating to aerodromes, navigation aids, etc., and to report changes in forecast weather</i>
Y	N	NS	NA	8	PLANNED RE-RELEASE
				8.1	<i>If the operator uses planned re-release procedures in connection with extended over water operations, the following areas should be considered:</i>
				8.2	<i>A separate operational analysis should be prepared for the two routes and provided to both the PIC, dispatcher, and flight follower.</i>
				8.3	<i>Re-release messages should be transmitted, acknowledged, and recorded. The message should include all requirements including NOTAM and weather information.</i>
				8.4	<i>The aircraft should meet landing performance requirements at the intermediate destination.</i>
Y	N	NS	NA	9	INABILITY TO PROCEED AS RELEASED
				9.1	<i>Policy concerning the PIC's latitude to deviate from a dispatch release without obtaining a new release should be stated</i>
				9.2	<i>PIC's and dispatchers for the actions to take when a flight cannot be completed as planned (such as destinations or alternates below minimums, runways closed or restricted)</i>
				9.3	<i>Procedures to follow in case of diversion or holding should be specifically and clearly stated</i>



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				9.4	<i>Procedures to be followed in case of an emergency procedure which results in deviation from local regulations or procedures should be clearly stated</i>
Y	N	NS	NA	10	WEATHER
				10.1	<i>Weather reports should be obtained from a source approved by the DGCA</i>
				10.2	<i>Forecasts should be based on approved weather reports</i>
				10.3	<i>The operator have adequate procedures for updating weather information when the aircraft is delayed on the ground</i>
				10.4	<i>The operator should have adequate procedures for providing the latest available weather reports and forecasts to flight crews while the flight is en route</i>
				10.5	<i>Procedures should be employed for disseminating information pertaining to turbulence, thunderstorms, and other adverse weather phenomena; and as well as the best routes for avoiding them</i>
				10.6	<i>The flight should not be released into know icing conditions unless equipped to cope with such condition</i>
Y	N	NS	NA	11	AERODROME OPERATING MINIMA
				11.1	<i>If release under VFR is authorized, the forecast and actual weather reports should permit VFR flight over all portions of the route to be flown under visual flight rules</i>
				11.2	<i>IFR departure minimums should be consistent with Air Navigation Act and specific DGCA approvals</i>
				11.3	<i>Takeoff alternates should be named on the dispatch release when flights are released with the departure airport below landing minimums, and should meet the requirements of ICAO Annex 6 Para 4.3.4.1 and applicable Air Navigation Act</i>
				11.4	<i>Destination weather minimums should be clearly defined</i>
				11.5	<i>The operator should make provisions regarding weather minimums for "high minimums" (or "low time") captains</i>
				11.6	<i>When a flight is released to a destination below CAT I minimums, the airplane type should be equipped and authorized for CAT II or CAT III operations at that location and the captain should be properly qualified</i>
				11.7	<i>destination alternates should be named on the dispatch release when required by Air Navigation Act</i>
				11.8	<i>The weather at the named destination alternate airport should be equal to or better than that required by applicable regulations.</i>
				11.9	<i>Flights should not be continued toward the aerodrome of intended landing unless the latest available information indicates that operating minima can be complied with.</i>
Y	N	NS	NA	12	MINIMUM EN ROUTE ALTITUDES
				12.1	<i>The operator should establish minimum en-route altitudes for routes flown, which should not be lower than those established by the DGCA.</i>
Y	N	NS	NA	13	SELECTION OF ALTERNATES
				13.1	<i>Policy, direction, and guidance should be provided for the selection of takeoff, en-route, and destination alternate</i>
				13.2	<i>Terrain and engine out performance should be considered in selecting an alternate</i>
Y	N	NS	NA	14	NOTAMS
				14.1	<i>NOTAM information should be available and utilized</i>
				14.2	<i>Global Positioning System (GPS), Omega and Loran NOTAMs - needed for your State NOTAMs should be provided to appropriate extended over water operations</i>
Y	N	NS	NA	15	INFORMATION
				15.1	<i>The operator should make adequate provisions for supplying airport and navigation information to pilots and dispatchers. (AIP, AIRAC & AIC etc.)</i>
				15.2	<i>The operator should have an adequate method for providing data to dispatchers on takeoff and landing minimums at each airport. Dispatchers should have immediate access to such data</i>



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Y	N	NS	NA	16	FUEL AND OIL SUPPLIES
				16.1	All increments of fuel required by ICAO Annex 6 and DGCA regulations (start & taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, holding, and contingency) should be provided. Special fuel provisions for extended range operations should be strictly adhered to
				16.2	If aircraft are dispatched without an alternate, adequate contingency fuel should be carried for un-forecast winds, terminal area delays, runway closures, and contingencies
				16.3	Minimum fuel procedures should be specified for both dispatchers and PIC's and should be adequate for the environment in which operations are conducted
Y	N	NS	NA	17	ENGINE OUT PERFORMANCE CONSIDERATIONS
				17.1	The operator should take into account engine out performance rules when applicable to specific routes and types of operations.
				17.2	Engine out performance analysis should be complete and accurate
				17.3	Flights and extended range operations
				17.4	Adequate guidance should be available for drift down computations and fuel dump requirements
Y	N	NS	NA	18	EMERGENCY PROCEDURES
				18.1	Emergency action procedures and checklists should be published and readily available to operations control personnel for the following emergencies: 1. In-flight Emergency 2. Crash 3. Overdue or missing aircraft 4. Bomb threat 5. Hijacking
				18.2	Operator should have available lists containing information on the emergency and survival equipment carried aboard its airplanes
				18.3	Provisions should be made to retain in safe custody the flight recorder of an airplane which becomes involved in an accident
Y	N	NS	NA	19	CHANGEOVER PROCEDURES
				19.1	During shift changes, an adequate overlap should be provided for dispatchers and other flight operations control personnel to brief their oncoming counterparts.
Y	N	NS	NA	20	COMMUNICATIONS AND REPORTS
				20.1	Provisions should be made concerning the following 1. In flight meteorological observations and reports 2. Reports of hazardous conditions other than meteorological
				20.2	Coordination with ATS regarding operational instructions to aircraft in flight which change an ATS flight plan
SECTION B DISPATCHERS AND METEOROLOGISTS.					
Y	N	NS	NA	1	QUALIFICATIONS
				1.1	All dispatchers should be certified in accordance with the CAA regulations
				1.2	Dispatchers should be successfully completed a competency check within a required eligibility period
				1.3	Dispatchers should have completed route familiarization within a specified time period
				1.4	Dispatchers at foreign locations should hold dispatcher certificates from the country of the operator
				1.5	Any meteorologists who are employed by the operator should be qualified according to CAA regulations and operator policy
Y	N	NS	NA	2	KNOWLEDGE OF WEATHER.
				2.1	Knowledgeable about the following weather conditions
				2.2	Surface (fronts, fog, low ceilings, etc.)
				2.3	Upper Air (tropopause, jet streams)
				2.4	Turbulence (pressure and temperature gradients)
				2.5	Severe (Low level wind shear, microburst, icing, thunderstorms)



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				2.6	Able to read terminal reports, forecasts, various weather depiction charts and upper air charts and interpret the meanings
Y	N	NS	NA	3	KNOWLEDGE OF THE AREA.
				3.1	Able to immediately recognize the airport identifiers for the airports in the area they are working
				3.2	Generally familiar with the airports in the area they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)
				3.3	Aware of which airports in the areas they are working in are special airports, with regard to crew qualifications
				3.4	Aware of the terrain surrounding the airports in the areas they are working
				3.5	Aware of dominant weather patterns and seasonal variations of weather in the area
				3.6	Aware of route segments limited by drift down
Y	N	NS	NA	4	KNOWLEDGE OF AIRCRAFT & FLIGHT PLANNING
				4.1	The general performance characteristics of each airplane with which they are working (such as average hourly fuel burn, holding fuel, engine out, drift down height, effect of an additional 50 knots of wind, effect of a 4,000 ft. lower altitude, crosswind limits, maximum takeoff and landing weights, required runway lengths)
				4.2	All of the elements contained in the operator's flight plan
Y	N	NS	NA	5	KNOWLEDGE OF POLICY
				5.1	Knowledgeable regarding CAA policy and authorizations regarding such items as weather minimums
				5.2	ware of the provisions of the operators manual regarding all policies and procedures discussed in this section
Y	N	NS	NA	6	KNOWLEDGE OF DUTIES & RESPONSIBILITIES
				6.1	Knowledgeable of their responsibilities under the Air Navigation Act (such as briefing PIC; cancelling, re-scheduling, or diverting for safety; in-flight monitoring; in-flight notification of PIC)
				6.2	Knowledgeable of their responsibilities under the operator's manual as discussed in paragraph A
Y	N	NS	NA	7	PROFICIENCY
				7.1	Competent in the performance of their assigned duties
				7.2	Alert for potential hazards
Y	N	NS	NA	8	DUTY TIME
				8.1	Regulatory requirements should be complied with. in the absence of regulatory requirements, shifts should be of a reasonable length and adequate rest time should be provided between shifts
SECTION B SUPERVISORS.					
Y	N	NS	NA	1	QUALIFICATION
				1.1	Supervisors of dispatchers should themselves be qualified and current as dispatchers
				1.2	Conduct of Competency checks. Competency checks which are administered by supervisors should be appropriate, thorough, and rigorous
SECTION C FACILITIES AND STAFF					
Y	N	NS	NA	1	ADEQUACY OF FACILITIES
				1.1	Working space should be adequate for the number of people working in the dispatch Centre
				1.2	Temperature, lighting, and noise levels should be conducive to effective performance by operations personnel
				1.3	Access to the facilities should be controlled
Y	N	NS	NA	2	PERTINENT INFORMATION

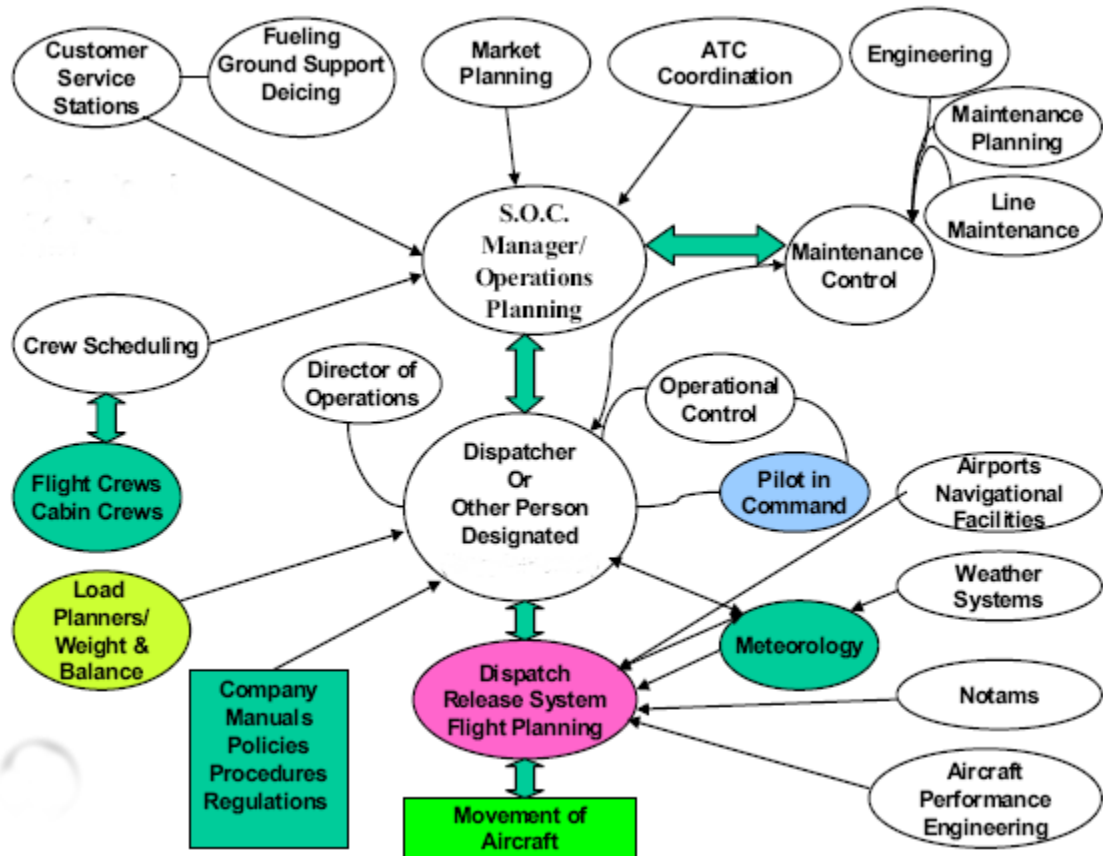


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				2.1	<i>Dispatchers should be supplied with all the information they require (such as on flight status, maintenance status, load, weather, facilities)</i>
				2.2	<i>Information effectively disseminated and displayed; and be quickly and accurately located</i>
				2.3	<i>Real time weather displays should be available for adverse weather avoidance</i>
Y	N	NS	NA	3	COMMUNICATIONS
				3.1	<i>A dispatcher should be able to establish rapid and reliable voice communications with a captain at the gate and to be able to deliver a message to a flight en-route and get a response within a reasonable time interval.</i>
				3.2	<i>Dispatchers should be properly authorized and qualified to use all communications channels required for operational control</i>
				3.3	<i>Direct voice radio communications should be available between the control Centre and line stations to the maximum extent possible</i>
				3.4	<i>Backup communications links should be available in case of a failure of the primary links</i>
				3.5	<i>The operations control Centre should have adequate communications with appropriate ATS facilities</i>
Y	N	NS	NA	4	MANAGEMENT
				4.1	<i>Overall responsibility for operations in progress should be assigned by the operator to one individual who can coordinate the activities of all of the dispatchers</i>
				4.2	<i>Adequate internal communications links to flow control type facilities and to high level management officials should be firmly established</i>
Y	N	NS	NA	5	WORKLOAD
				5.1	<i>The operator should assign enough personnel to adequately handle the workload during periods of both normal and non-routine operations</i>
				5.2	<i>Dispatchers should have enough time perform both dispatch and post flight duties in an effective manner. Dispatchers should not be used to perform other functions such as clerks, maintenance officers, etc., to the detriment of their primary function</i>
				5.3	<i>Duty time restrictions for certificated personnel should be adhered to.</i>
Inspector's Remarks					
Date:				Signature:	
DD Ops Remarks					
Date:				Signature:	

APPENDIX 13-B

Operational Control System Diagram





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Chapter 14 - LEASE & INTERCHANGE ARRANGEMENTS

Note: Regulations concerning aircraft leasing is found in Implementing standard 091

14.1 BACKGROUND & DEFINITIONS

14.1.1 Continuing economic deregulation of the global air transportation industry, and increasing international cooperation between the governments working through bilateral and multilateral agreements have resulted in greater numbers of aircraft lease and interchange agreements. These agreements are widely used to meet certain market demands and seasonal fluctuations in both the domestic and global air transportation systems.

14.1.2 For the purpose of standardization concerning surveillance, enforcement, and compliance with applicable ANR requirements, the following definitions apply to lease and interchange agreements—

- a. **Lease** Any agreement by a person (the lessor) to provide an aircraft to another person (the lessee) who will use the aircraft for compensation or hire purposes. A lease is not an agreement for the sale of an aircraft or a contract of conditional sale.
- b. **Dry lease.** Any agreement in which a lessor such as an air operator, bank, or leasing company—
 - Leases an aircraft without any crewmembers to an air operator (the lessee); and
 - Which the lessee is clearly authorized to integrate into its operations; and
 - Where the lessee is expected to assume all key AOC-related responsibilities for operational and maintenance arrangements.
- c. **Wet lease.** Any agreement in which an air operator (the lessee) leases an aircraft from a Sri Lanka AOC holder, foreign air operator, or other entity (the lessor) where the lessor—
 - Provides the aircraft;
 - Provides all of the required qualified crew members; and
 - Operates the aircraft; and
 - Retains all key AOC-related responsibilities (see list in above note box).
- d. **Damp lease.** Any agreement in which an air operator (the lessee) leases an aircraft from a Sri Lanka AOC holder, foreign air operator, or other entity (the lessor) where the lessor—
 - Provides the aircraft;
 - One or more of the required crew members; and
 - Operates the aircraft; but
 - Does not discharge one or more of the key AOC-related responsibilities.
- e. **Charter.** Any arrangement in which an individual, operator or organization, having passengers or cargo—



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- Engages a properly authorized AOC holder to provide all necessary services to transport these passengers and cargo from one location to another;
 - Does not operate the aircraft; and
 - Does not assume any AOC-related responsibilities
- f. **Interchange agreement.** Any agreement in which the operational control of an aircraft is transferred by legal agreement—
- From one AOC holder to another AOC holder;
 - For repetitive short periods of time;
 - In which the latter AOC holder assumes all key AOC-related responsibilities, except for performance and recording of maintenance.
- g. **Operational control, operation of aircraft, or operate aircraft.** Means the use of aircraft, for the purpose of air navigation and includes the navigation of aircraft.
- Any person who causes or authorizes the operation of aircraft, with or without the right of legal control (in the capacity of owner, lessee, or otherwise) of the aircraft, shall be considered to be engaged in the operation of aircraft.

14.2 GUIDANCE REGARDING ALL LEASING ARRANGEMENTS

14.2.1 PROJECT COORDINATOR

14.2.1.1 Most of these leasing arrangements projects involve both the assigned operations and airworthiness inspectors. As in all request for an authorization from the DFS, one person will be the project coordinator to ensure that the project is complete is completed in a quality and timely manner.

14.2.1.2 The project coordinator will normally be the assigned operations inspector.

14.2.1.3 The assigned airworthiness inspector will be the project coordinator on those leasing arrangements that involve the dry-leasing of foreign-registered aircraft.

14.2.2 PRIOR FSS AUTHORIZATION IS REQUIRED

14.2.2.1 All leasing agreements and arrangements involving transportation of passengers and property for hire must be submitted to the DFS for approval or acceptance prior to executing and implementing these arrangements.

14.2.2.2 Operators are expected to anticipate their possible leasing arrangements and obtain prior authorization as far in advance of a proposed implementation date as possible.

14.2.3 PRE-SUBMISSION DISCUSSIONS WITH PARTIES

14.2.3.1 Operators should be encouraged to discuss their proposed arrangements as early in the leasing process as possible.

14.2.3.2 These discussions will ensure that the operator is fully aware of both the operations and airworthiness submission requirements and time lines associated with the acceptance of the aircraft leasing arrangements.

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14.2.3.3 These discussions will include a full briefing of the involved operators that includes the—

- a. Provisions of the Doc 8335, Aircraft Leasing Arrangements;
- b. Review of the definitions that are applicable to leasing and interchange;
- c. Amplification of the key AOC-related functions that apply to aircraft leasing;
- d. Required contents of the leasing agreement;
- e. Required supporting documents that must be submitted;
- f. General flow of events that will occur during the process; and
- g. The approximate time lines for completion of the process.

14.2.4 TIME LINES BEFORE APPROVAL DECISION IS MADE

14.2.4.1 Short-term “charters” between two Sri Lanka AOC holders with compatible operations approvals will generally be processed within 2+ working days.

14.2.4.2 Wet-leasing between two Sri Lanka AOC holders with compatible operational approvals will also be processed within 5+ working days.

14.2.4.3 Wet-leasing a foreign AOC holder to perform flights on behalf of a Sri Lanka AOC holder may have some issues that will require a protracted approval process.

- a. 10+ working days for those foreign AOC holders will prior approval to operate to/from Sri Lanka and have compatible operational authorizations with the Sri Lanka AOC holder
- b. 30+ working days for those foreign AOC holders without prior approval to operation to/from Sri Lanka.

14.2.4.4 Dry-leasing of Sri Lanka-registered aircraft of the same make, model and series can require, depending on the number of differences between those aircraft—

- a. 10+ working days for smaller air taxi aircraft
- b. 25+ working days for aircraft of more than 5700 kg

14.2.4.5 Dry-leasing of Sri Lanka-registered aircraft of a different make and model by Sri Lanka AOC holder can require a formal certification project, with time lines

- a. 20+ working days for small air taxi aircraft
- b. 35+ working days for aircraft of more than 5700 kg

14.2.4.6 Dry-leasing of foreign-registered aircraft by Sri Lanka AOC holder can require—

- a. 30+ working days for aircraft of the same make, model and series
- b. 45+ working days for aircraft of make, model and series that has not previously been operated by the Sri Lanka operator.



14.2.5 INITIAL APPLICATION REVIEW

14.2.5.1 As soon as possible after the formal submission of the leasing arrangements application documents, the assigned FS inspectors will conduct an initial review of the submission to ensure all required documents have been submitted and are complete for document conformance processing.

14.2.5.2 The assigned inspectors may choose to have a meeting with the applicant at the time of formal submission.

- a. This is advantageous in situations where the number of application documents are expected to be few and the package can be accepted or rejected with minimal review requirements.
- b. This practice is not advantageous when a larger number of application documents are expected, such as in wet-leasing with a foreign AOC holder or dry-leasing of a foreign-registered aircraft. In these cases, a separate initial application review meeting should be held with only FS personnel.

14.2.6 DOCUMENT CONFORMANCE EVALUATION

14.2.6.1 General Guidance

- a. The assigned operations and maintenance inspectors will conduct joint or parallel evaluation of the documents that apply to both technical specialties.
- b. The operations and maintenance inspectors will make a separate review of the general aspects of AOC holder responsibilities to understand the total relationships. Once that understanding is gained, the inspectors should focus on the key AOC-related responsibilities that should be well defined in the lease agreement.

14.2.6.2 Determination of Operational Control

- a. Evaluation of an aircraft leasing agreement to determine which party has operational control is a critical function assigned to an operations inspector.
- b. The Sri Lanka regulations provide that the DGCA shall determine that a person has operational control if that person exercises authority and responsibility for a specified number of operational functions, such as—
 - Assigning crewmembers for particular flights
 - Directly paying crewmembers for services, and
 - Initiating, diverting and terminating flights.

14.2.6.3 The CAASL determination of whether the lessor or lessee has operational control will be made by the assigned operations inspector. Such determination will be based on a careful review of the lease agreement, and any other circumstances regarding the actual operation



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- 14.2.6.4 The CAASL has taken the position (concerning the safety regulations) that if a person leases an aircraft to another person and also provides the flight crew, fuel, and maintenance, the lessor of the aircraft is the operator.

14.2.7 INSPECTION & DEMONSTRATION

14.2.7.1 Wet Leases Between Sri Lanka AOC Holders

- a. There is no requirement for an inspection or demonstration prior to authorizing the aircraft leasing arrangements.
- b. The assigned inspectors should, however, plan and conduct inspections of either the first flight or early in the first week of such operations to ensure that all elements of the agreement relative to the key AOC-related responsibilities are being implemented properly

14.2.7.2 Wet Leases with Foreign AOC Holders

- a. Normally, an “orientation” visit is planned and conducted at the foreign AOC holder’s primary facilities, including operational and maintenance control organizations, aircraft maintenance records and flight crew to ensure that the AOC holder is at least in compliance with ICAO Annex 6 and their CAA is providing safety oversight.
- b. The assigned inspectors should plan and conduct this orientation visit as soon as a determination has been made that the leasing arrangements are going to be acceptable.

14.2.7.3 Dry Leases with Sri Lanka-Registered Aircraft

- a. No additional inspection will be required if the aircraft is the same make, model and series as aircraft currently operated by the lessee and there are no appreciable differences.
- b. Where appreciable differences exist, the assigned operations inspector should plan and conduct inspections of training-in-progress and the use of the documentation.
- c. A full formal certification will be required if the aircraft is a make and model not previously operated by the AOC holder.

14.2.7.4 Dry Leases of Foreign-Registered Aircraft

- a. Operations inspectors should wait for the determination of the acceptability of the maintenance arrangements and the arrangements with the lessor’s CAA.
- b. When the maintenance arrangements are determined to be acceptable and an official agreement is reached with the lessor’s CAA, the guidance included in paragraph 26.2.7.3 of this manual will apply.

14.2.8 FINAL CERTIFICATION ACTIONS

- 14.2.8.1 After determining that the leasing arrangements and all submitted documentation are satisfactory, the FSS shall amend the master operations specifications of that AOC holder. The amendment to the operations specifications shall contain the following information—

- a. The names of the parties to the agreement and the duration of the agreement

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- b. The make, model, and series of each aircraft involved in the agreement
- c. The kind of operation
- d. The expiration date of the lease agreement
- e. A statement specifying the party deemed to have operational control
- f. Any other item, condition, or limitation the FSS determines necessary

14.3 APPLICATION FOR APPROVAL/ACCEPTANCE OF LEASE ARRANGEMENTS

14.3.1 ALL APPLICATIONS

14.3.1.1 The following documents must be provided with all applications involving aircraft lease or interchange—

- a. A complete copy of the aircraft lease agreement; and
- b. An operator analysis showing how this leasing arrangement conforms with ANR requirements.

14.3.2 WET LEASE APPLICATIONS BETWEEN SRI LANKA AOC HOLDERS

14.3.2.1 The requirements of paragraph 15.3.1 apply to applications involving wet leasing between Sri Lanka AOC holders.

14.3.3 WET LEASE APPLICATIONS WITH FOREIGN AOC HOLDERS

14.3.3.1 In addition to the requirements of paragraph 15.3.1, the following documents must be provided with applications involving wet leasing with foreign AOC holders—

- a. A complete copy of the foreign operator's AOC and Master operations specifications;
- b. A copy of the foreign operator's Aircraft Display operations specifications for the aircraft type to be operated;
- c. A copy of the Sri Lanka economic authorization for commercial air transport flights to and from Sri Lanka;
- d. Copies of the foreign crew member's licenses and other required documents;
- e. A copy of the foreign crew members training and qualification records to show that they are qualified and current;
- f. Copies of each required aircraft document (C of R, C of A, Noise & Radio) for each aircraft the foreign operators will use for this lease;
- g. Current airworthiness status of the aircraft (aircraft airworthiness records)
- h. A completed copy of the Conformance Checklist.

14.3.4 DRY LEASE APPLICATIONS (SRI LANKA-REGISTERED AIRCRAFT)

14.3.4.1 In addition to the requirements of paragraph 3.1, the following documents must be provided with applications involving dry leasing of Sri Lanka registered aircraft—

- a. A operator-generated copy of the conformity documents for the aircraft involved;
- b. An operator-generated assessment of aircraft differences (ANR variances) from the current fleet;

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- c. A copy of the Maintenance Program (and any necessary bridging information) applicable to the aircraft to be used;
- d. A copy of the approved MEL to be used.

14.3.5 DRY LEASE APPLICATIONS (FOREIGN-REGISTERED AIRCRAFT)

14.3.5.1 In addition to the requirements of paragraph 3.1, the following documents must be provided with applications involving dry-leasing of foreign-registered aircraft—

- a. Copies of the validated licenses and other required documents issued by the State to Sri Lanka crew members to be used;
- b. A copy of the approved Minimum Equipment List to be used;
- c. A copy of the approved Maintenance
- d. Program (and bridging documents) for the aircraft to be used;
- e. A copy of the applicable Maintenance Control Manual for the aircraft to be used;
- f. A operator-generated copy of the conformity documents for the aircraft involved;
- g. An operator-generated assessment of aircraft differences (ANR variances) from the current fleet;

14.3.5.2 This situation will require an official agreement between governments of the two governments

- a. Outlining each CAA's responsibilities with respect to State of the Registry and State of the Operator ICAO obligations; and
- b. Providing the CAASL-FSS worldwide access for inspection to the aircraft and crews involved.

14.4 CONTENTS OF THE LEASING AGREEMENTS

14.4.1 The following elements will be a part of all leasing agreements submitted for CAASL evaluation—

- a. The official names of the parties;
- b. The official addresses of the parties;
- c. The duration of the agreement, with specific start and expiration dates;
- d. The make, model, series and registration numbers of each aircraft involved in the agreement;
- e. An explanation of the type of operations that will be conducted by the lessee
- f. The interchange points (interchange agreements only);
- g. The specifications regarding which party has responsibility and authority for operational control, including the final decisions for initiating, terminating or diverting a flight;
- h. The specifications regarding which party has the responsibility and authority for provision of aeronautical data, weather and flight planning and operational flight plan for the operation of the aircraft;
- i. The specifications regarding which party has the responsibility and authority for provision of aircraft loading, computation of mass and balance and performance associated with each flight of the aircraft;

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- j. The specifications regarding which party has responsibility and authority for crew scheduling including assignment to duty and compliance with duty, flight and rest period requirements;
- k. The specifications regarding which party has responsibility and authority for ensuring that crew training, proficiency and line checks, and currency requirements are met;
- l. The specifications regarding which party has responsibility and authority for maintenance control of the aircraft involved;
- m. The specifications regarding which party has responsibility and authority for planning, arranging, performing and deferring maintenance for the aircraft;
- n. The specifications regarding which party has responsibility and authority for maintaining the official maintenance records for the aircraft involved;

14.5 ADDITIONAL INSTRUCTIONS: DRY LEASE AGREEMENTS

14.5.1 GENERAL GUIDANCE

- 14.5.1.1 From any operational standpoint, dry lease of an aircraft by a Sri Lanka AOC holder does not normally present a significant problem. Operational control of any dry leased aircraft rests with the operator lessee.
- 14.5.1.2 In most dry lease agreements, the lessor is either a bank, a leasing company, or a holding company which has neither the operational expertise and infrastructure nor the desire to assume responsibility and liability for controlling daily operations of the leased aircraft.
- 14.5.1.3 The air operator or other type of operator leasing the aircraft applies for an amendment of its operations specifications to list the leased aircraft. If an aircraft is dry leased from another operator, the lease agreement must be explicit concerning the maintenance program and Minimum Equipment List to be followed during the term of the dry lease.

14.5.2 MINIMUM REQUIREMENTS

- 14.5.2.1 An AOC holder may be approved by the FSS to dry lease an aircraft for the purpose of commercial air transportation provided that the following minimum conditions are met—
 - a. The AOC holder provides the Authority with a copy of the dry lease agreement to be executed;
 - b. The AOC holder has operational control of the aircraft during the period of the lease;
 - c. Dispatch and/or flight watch functions are performed by the AOC holder;
 - d. The flight and cabin crewmembers are trained, qualified and scheduled by the AOC holder; and
 - e. The maintenance arrangements are acceptable to the Authority.
- 14.5.2.2 At a minimum, the dry lease agreement shall be explicit concerning the—
 - a. Entity that has operational control, with the authority for initiating and terminating flights;
 - b. Responsibility for crew training, qualification and scheduling;
 - c. Maintenance and servicing of aircraft, including the Maintenance program that will be used;
 - d. Minimum Equipment List that will be used;

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14.5.3 DRY LEASING OF FOREIGN REGISTERED AIRCRAFT

14.5.3.1 An AOC holder may be approved by the Authority to dry-lease a foreign-registered aircraft for commercial air transport in accordance with the regulatory requirements.

14.5.3.2 To be eligible for dry lease the foreign registered aircraft shall—

- a. Have an appropriate airworthiness certificate issued, in accordance with ICAO Annex 8, by the country of registration and meets the registration and identification requirements of that country.
- b. Be of a type design which complies with all of the requirements that would be applicable to that aircraft were it registered in Sri Lanka, including the requirements which shall be met for issuance of a Sri Lanka standard airworthiness certificate (including type design conformity to the manufacturers type certificate data sheets, condition for safe operation, and the noise, fuel venting, and engine emission requirements).
- c. Be maintained according to a maintenance program approved by the State of Registry and acceptable to the Authority.
- d. Be operated by qualified crew members employed by the AOC holder.

14.5.3.3 The Authority has determined the extent of the State of Registry's arrangements for continuing airworthiness and find that these arrangements are adequate for the type of operation;

14.5.3.4 The Authority will have free and uninterrupted access, both in Sri Lanka and at any international location, to the—

- a. Aircraft on the ramp and during flight time,
- b. Maintenance and operations facilities,
- c. Maintenance and operations personnel,
- d. Training facilities and simulators used

14.5.3.5 The aircraft must be operated in accordance with the regulations applicable to Sri Lanka AOC holders, and

14.5.3.6 The maintenance arrangements must result in the aircraft always being in compliance with the State of Registry requirements and the maintenance requirements applicable to Sri Lanka AOC holders.

14.6 ADDITIONAL INSTRUCTIONS: WET LEASE AGREEMENTS

14.6.1 GENERAL GUIDANCE

14.6.1.1 The term "wet lease" is a leasing agreement whereby an AOC holder agrees to provide an aircraft and required crewmembers to another air operator.

- The words "AOC holder" refers to the Sri Lanka person authorized to operate aircraft in commercial air transport.

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- 14.6.1.2 The assigned airworthiness inspector will be the project coordinator.
- 14.6.1.3 The Airworthiness Inspector manual, Chapter 16, will be the controlling guidance.
- 14.6.1.4 A code share arrangement will be processed in the same manner as a “wet-lease.”
- 14.6.1.5 The Sri Lanka regulations require that no Sri Lanka AOC holder may allow others to conduct wet lease operations on its behalf unless the CAASL is advised and has found the arrangements to be acceptable.

14.6.2 PROCESSING WET LEASE AGREEMENTS

- 14.6.2.1 This agreement should be immediately reviewed by the assigned operations and maintenance inspectors to assure that it is complete.
- 14.6.2.2 The wet lease agreement shall be explicit concerning the—
- Entity that has operational control, with the authority for initiating and terminating flights;
 - Responsibility for crew training, qualification and scheduling;
 - Maintaining records in compliance to flight time, flight duty periods, rest periods and fatigue management systems.
 - Maintenance and servicing of aircraft, including the Maintenance program that will be used;
 - Minimum Equipment List that will be used;
- 14.6.2.3 Following this review, the principal inspectors should make a written operational assessment of whether the lessor or the lessee will have operational control under the terms of the lease.
- 14.6.2.4 When a determination of operational control is made, the FSS will advise the AOC holder without delay.
- 14.6.2.5 The lessor may be asked to submit any clarifying or supplemental information regarding the lease needed for making proper determination of operational control.

14.6.3 ADDITIONAL INSTRUCTIONS: DAMP LEASE AGREEMENTS

- 14.6.3.1 The term "damp lease" is a leasing agreement whereby a AOC holder agrees to provide an aircraft and usually at least one crewmember to another air operator.
- 14.6.3.2 The only apparent damp lease arrangements will be the use of Sri Lanka cabin crew members on a foreign AOC holder. But even in that case, the foreign AOC holder must train and qualify the cabin crew in accordance with their procedure manuals and competency requirements. This action would make the cabin crew an integral part of the foreign AOC holder's crews and would not really be a “damp” situation.

14.7 ADDITIONAL INSTRUCTIONS: INTERCHANGE AGREEMENTS

14.7.1 GENERAL

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14.7.1.1 An interchange agreement is a subset of a dry lease agreement. An interchange agreement permits an air carrier to dry lease aircraft to another air carrier for short periods of time.

14.7.1.2 The aircraft may be listed on the operations specifications of both common carriage operators at the same time.

The registration markings of each aircraft must be listed on the operations specifications of each AOC holder.

14.7.1.3 The Sri Lanka Regulations require that each AOC holder to obtain prior approval from the FSS before it conducts any operation using any aircraft.

14.7.2 APPROVAL PROCEDURES

14.7.2.1 Matters which are commonplace in the normal operations of air carrier frequently present major problems in an aircraft interchange. Therefore, special emphasis must be given to the review, approval, and monitoring of this type of operation.

14.7.2.2 The following direction and guidance is relevant when an application is received for an aircraft interchange.

- a. Each air carrier party to an interchange agreement will submit an application for amendment of its operations specifications to the FSS.
 - Each air carrier will submit a copy of the interchange agreement or a written memorandum of its terms as part of the application.
- b. Assigned inspectors will review the application and conduct the necessary evaluations and/or inspections to assure compliance with the ANRs.
 - The results of these reviews and inspections by the FSS will be communicated to parties to the interchange agreement.
 - Close coordination between the concerned principal operations, maintenance, and avionics inspectors must be maintained.
- c. Important details may be overlooked, unless interchange operations are closely monitored.
 - For example, life rafts and emergency radios have been found improperly stowed during overwater flights on aircraft which have no provisions for their stowage.
 - In another example, an emergency radio was found unsecured on the flight deck where it could have created a hazardous condition in turbulent weather.
 - Equipment ANR variances such as this and nonstandard cockpit arrangements of switches, instruments, and controls can be potentially dangerous unless effective training or corrective changes are accomplished before operation and are closely monitored thereafter.

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14.7.3 AMENDING CAASL APPROVAL DOCUMENTATION

14.7.3.1 When all items have been found satisfactory, the CAASL records, Leasing Arrangements, of both the primary and interchange operators shall be amended to show issuance of approval to each operator for the interchange.

- a. The primary operator is the AOC holder who would normally operate the aircraft if the interchange agreement were not in effect.
- b. The interchange operator is the other party to the interchange agreement.
- c. The names of each party shall be entered in the ORG Aircraft Leasing Arrangements of each operator.

14.7.3.2 The aircraft make, model, and series shall be entered in the appropriate column of the operations specifications. In addition, the registration markings of each aircraft to be used in the interchange agreement must be in the CAASL records and operations specifications of the primary and interchange operators.

14.7.3.3 The interchange points shall be entered in the **Notes** field of the of the primary and interchange operators' **ORG Aircraft Leasing Arrangements** sub table. The transfer of flight crews and operational control responsibility shall take place only at the airports specified in the interchange points specified in each operations specification.

14.7.3.4 Additional conditions, limitations, and safety related requirements shall be included in the ORG Notes field of the primary and interchange operators' operations specifications.

14.7.4 PROCEDURE FOR ARTICLE 83 bis

14.7.4.1 Article 83 bis provides for a transfer of duties and functions, and their corresponding responsibilities, from the State of Registry to the State of the Operator.

***Note:** There is no provision under Article 83 bis to transfer safety oversight responsibilities of an AOC holder from one State to another.*

14.7.4.2 The duties and functions that maybe transferred are those covered by Articles 12, 30, 31, and 32(a) of the Convention. The condition to 83 bis is that only the functions and duties under Articles 12, 30, 31 and 32(a) may be transferred as follows:

- a. Article 12: Rules of the Air. The obligation to ensure that every aircraft carrying its registration mark complies with the rules of the air (wherever that aircraft may be) and those perpetrators are prosecuted;
- b. Article 30: Aircraft radio Equipment. The requirement for aircraft radios to be licensed by the State of Registry. Radios can only be used by members of the flight crew licensed for that purpose by the State of Registry.

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- c. Article 32(a): Licenses of Personnel. The requirement for pilot and crew of aircraft to be provided with certificates of competency issued or rendered valid by the State of Registry.
 - d. Article 31: Certificates of Airworthiness. The requirement for the aircraft to have a certificate of airworthiness issued or rendered valid by the State of Registry.
- 14.7.4.3 Article 83 bis of the convention was ratified by Sri Lanka on 2000.
- 14.7.4.4 Ratification of Article 83 bis does not entail the automatic transfer of responsibilities between States. For each specific lease, charter, interchange agreement or any similar arrangement between companies in accordance with Article 83 bis, a bilateral agreement between the two states (State of Registry and State of Operator) must be signed.
- 14.7.4.5 Each bilateral agreement must specify the responsibilities being transferred from the State of Registry to the State of Operator and must include identification of the aircraft being transferred.
- 14.7.4.6 The decision to enter into an Article 83 bis agreement is the prerogative of the States concerned, and unless functions and duties are clearly identified and reassigned by a transfer agreement, they continue to rest with the State of Registry.
- 14.7.4.7 States of the lessor /lessee shall ensure its national legislation allows for the transfer of functions and duties and that it recognizes certificates of airworthiness, radio and crew licences issue or validated by the State of Operator. Similarly, the legislation should allow the State, if they are the State of Registry, to divest themselves of the functions and duties.
- 14.7.4.8 CAA SL does not transfer its safety oversight responsibilities to other Authorities. However, CAA SL may accept the transfer of State of Registry responsibilities from another Authority, if it deems it necessary to maintain effective oversight of the aircraft. CAA SL will inform the affected Sri Lankan operators when CAA SL has entered into an Article 83 bis agreement with the foreign Authority.
- 14.7.4.9 To initiate agreement to transfer of responsibilities using Article 83 Bis, CAASL will be required to organize meetings with the other State to discuss both operations and airworthiness matters with respect to the following areas:
- a. Flight Operations
 - b. Continuing airworthiness and aircraft maintenance
 - c. Operator's MCM procedures, if applicable
 - d. Flight and Cabin Crew training and checking
- 14.7.4.10 After an Article 83 bis agreement has been signed between two States, all other member countries of ICAO who ratified Article 83 bis are bound to recognize the State of the operator as substituting for the State of Registry, within the limits established by the arrangement, only after the States involved duly register their agreement with ICAO, or directly inform the other States parties to Article 83 bis, which may be affected by the transfer.



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- 14.7.4.11 States which are not parties to Article 83 bis, or States which are parties to it but which have not been duly informed about such an agreement, are not bound to recognize the transfer of functions and duties.
- 14.7.4.12 Sri Lanka will retain the authority to decide with which States it is willing to conclude a bilateral agreement and which regulatory responsibilities it is willing to accept under such an agreement.
- 14.7.4.13 Sri Lanka will not enter into a transfer agreement if the State of the Operator concerned is not capable of adequately performing the duties and functions that are envisaged for transfer. This is carried out by conducting an assessment of the lessor or lessee or reviewing the ICAO Safety Oversight Audit Programme Report of the State of the lessor or lessee.
- 14.7.4.14 For the purpose of identifying the States responsible for safety oversight on the occasion of any verification process such as ramp inspections, a certified true copy of the transfer agreement should be carried on board the aircraft at all times while the transfer agreement is in force. A Certified true copy of the AOC under which the aircraft is operated, and in which it is listed, shall also be carried on board.
- 14.7.4.15 In case the aircraft is to enter the airspace of Contracting States which are not parties to Article 83 bis, or which are parties but have not been duly advised about a transfer agreement in accordance with this provision, the certificates and licenses on board the aircraft should be issued or rendered valid by the State of Registry as the latter would, in this case, remain fully responsible in regard to Articles 30, 31 and 32 (a) of the Convention despite the transfer agreement with the State of the Operator.
- 14.7.4.16 CAASL approves the lease arrangement by approving the lessor's operations specifications amendments after being satisfied that all applicable leasing requirements spelt out in this chapter are met.
- 14.7.4.17 The leasing of a foreign registered aircraft to a Sri Lankan Air Operator applies to a foreign registered aircraft leased to a Sri Lankan Air Operator with Sri Lanka being the State of the Operator. CAA SL shall approve the lease arrangement by approving the lessee's (Sri Lankan Air Operator) operations specifications amendments after being satisfying that all applicable leasing requirements listed in this chapter are met.
- 14.7.4.18 The model agreement on the implementation of Article 83 bis of the Convention are in Appendix 3.

14.7.5 APPROVAL PROCEDURES

- a. The Approving Officer is DGCA. The officer processing the application must weigh the implications and consequences of a lease arrangement and brief the Approving Officer thoroughly. The officer is to seek the concurring views of the Air Transport Division, Legal Division and Air Cargo Division.

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- b. The officer should ensure that the responsibilities for the airworthiness and operations of the leased aircraft are clearly spelt out in the lease arrangement according to the responsibilities of the State of Registry and State of the Operator.
- c. If a lease arrangement is acceptable, the officer should obtain the approval of the Approving Officer before informing the operator in writing.
- d. The Sri Lankan AOC Holder's operations specifications shall also be amended to reflect the approval of the lease arrangement.



APPENDIX 14-A

CAA/OP/CL/



Civil Aviation Authority of Sri Lanka Aircraft Leasing Arrangements Review Check List

Date		Project	
Inspector		Aircraft MSN	
Location		Aircraft Reg.	
Operator			

The checklist will be filled by coordination of Operations, Airworthiness and Licensing section of CAASL.
Check YES column if you reviewed the record, procedure or event and have no comment
Check NO column if you reviewed the record, procedure or event and have a comment
Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment
Check NOT APPLICABLE column if the line item is not required in this particular Operator
Make notes regarding a NO answer for resolution

YES	NO	NS	NA	1	DOCUMENTATION SUBMITTED
				1.1	A complete copy of the leasing agreement was provided?
				1.2	An operator analysis was provided detailing how the leasing arrangements, particularly those between two operators, will be in conformance with the Civil Aviation Act, no.14 of 2010.
				1.3	For foreign air operators: A copy of the applicable AOC and operations specifications was provided?
				1.4	Aircraft Specific Special authorizations approved – EDTO, PBN, MNPS, RVSM
				1.5	For foreign air operators: A copy of the Sri Lanka economic authorization allowing commercial air transport operations to and from the Sri Lanka was provided?
				1.6	Copies of the licenses and other required documents for the crew members to be used were provided?
				1.7	A copy of the Flight and cabin crew training and qualification records according to ICAO Annex 6 - Chapter 9 (Flight Crew) and Chapter 12 (Cabin Crew) was provided?
				1.8	Copies of each required aircraft document (C of R, C of A, and Noise & Radio) are available?
				1.9	A copy of the aircraft maintenance records is available?
				1.10	A copy of the approved Minimum Equipment List was provided?



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				1.11	A copy of the approved Maintenance Program (and bridging documents, if applicable) for the aircraft was provided?
				1.12	A copy of the applicable Maintenance Control Manual for the aircraft was provided?
				1.13	A copy of the documents showing the aircraft's conformity with applicable airworthiness requirements for the aircraft involved was provided?
				1.14	An operator-generated assessment of aircraft differences (variances) from the current fleet is provided?
				1.15	The necessary documentation authorizing the CAASL-FSD worldwide access for inspection to the aircraft and crews involved is provided?
YES	NO	NS	NA	2	CONTENTS OF THE LEASING AGREEMENT
				2.1	The official names of the parties are included?
				2.2	The official addresses of the parties are included?
				2.3	The duration of the agreement are included with specific start and expiration dates?
				2.4	The make, model, series and registration numbers of each aircraft involved in the agreement are included?
				2.5	An explanation of the type of operations that will be conducted by the lessee are included?
				2.6	The interchange points are included?
				2.7	The specifications regarding which party has responsibility and authority for operational control are included?
				2.8	The specifications regarding which party has the responsibility and authority for provision of aeronautical data, weather and flight planning and release are included?
				2.9	The specifications regarding which party has the responsibility and authority for provision of aircraft loading, computation of mass and balance and performance associated with each flight of the aircraft are included?
				2.10	The specifications regarding which party has responsibility and authority for crew scheduling are included?
				2.11	The specifications regarding which party has responsibility and authority for maintaining crew training, proficiency and line checks, and currency requirements are included?
				2.12	The specifications regarding which party has responsibility and authority for maintenance control are included?
				2.13	The specifications regarding which party has responsibility and authority for arranging maintenance for the aircraft are included?
				2.14	The specifications regarding which party has responsibility and authority for maintaining the maintenance records for the air- craft current form included?
				2.15	All other items, conditions or limitations specified by the FSD as necessary for this particular agreement are included?
YES	NO	NS	NA	3	FLIGHT OPERATIONS ASSESSMENT RESULTS
				3.1	Lease agreement determined to be acceptable?



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				3.2	Arrangements for operational control for the duration of lease are acceptable?
				3.3	Arrangements for provision of aeronautical data, weather and flight planning and release associated with each flight of the air- craft for the duration of the lease are acceptable?
				3.4	Aircraft Communication and Navigation equipment are acceptable for the proposed operation. (PBN, MNPS, RVSM, electronic navigation data management)
				3.5	Arrangements for provision of aircraft loading, computation of mass and balance and performance associated with each flight of the aircraft for the duration of the lease are acceptable?
				3.6	Crew licenses and medicals determined to be acceptable for the operations proposed?
				3.7	Crew qualifications (route and aerodrome) determined to be acceptable for start of service?
				3.8	Arrangements for maintaining crew training, proficiency and line checks, and currency requirements for the duration of the lease are acceptable?
				3.9	Arrangements for maintaining flight and cabin crew reference documents current and available for the duration of the lease are acceptable?
				3.10	Assessment of the compatibility with lessee's aircraft fleet approvals complete and necessary any necessary arrangements for variances determined to be acceptable? (dry lease)
				3.11	Arrangements and documentation necessary for FSD unrestricted right of access for inspections for the duration of the lease deter- mined to be acceptable? (foreign-registered aircraft)
YES	NO	NS	NA	4	MAINTENANCE ASSESSMENT RESULTS
				4.1	Assigned maintenance inspector reports that all necessary maintenance assessment and document arrangements have been completed?
YES	NO	NS	NA	5	83 BIS DOCUMENTATION COMPLETED
				5.1	The official agreement for transfer of maintenance responsibility for the airworthiness of the aircraft involved has been signed by all par- ties?
				5.2	Notification (in the proper format) has been made to ICAO of the transfer of maintenance responsibility for the airworthiness of the aircraft involved?
YES	NO	NS	NA	6	FSD ACCEPTANCE DOCUMENTS COMPLETION
				6.1	Letter of Acceptance for aircraft lease/interchange/codeshare arrangements issued?
				6.2	ORG Aircraft Leasing Arrangements entries made to reflect acceptance of leasing/interchange/codeshare arrangements?
				6.3	ORG Aircraft Listing entries made to reflect inclusion of the leased aircraft? (dry-lease)
				6.4	Aircraft display operations specifications issued to include each air- craft involved in lease arrangements? (dry-lease)
				6.5	Master operations specifications updated to include new aircraft and leasing arrangements signed?



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Comments

Operations Inspector

Comments;

Airworthiness Inspector



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Chapter 15 - GROUND HANDLING ARRANGEMENTS

15.1 BACKGROUND

15.1.1 FUNCTIONS OF GROUND HANDLING

15.1.1.1 For the purpose of this chapter, “ground handling” will include the facilities, equipment, personnel, policies and procedures for—

- Ticketing of passengers and baggage;
- Acceptance and processing of cargo, including dangerous goods
- Cleaning the aircraft interior
- Servicing of rest room supplies
- Servicing of galley supplies
- Servicing of blankets, pillows and magazines
- Servicing of the aircraft;
- Fuelling of the aircraft;
- Loading of the cargo, including dangerous goods;
- Computation and provision of mass and balance data;
- Computation and provision of performance data;
- Correction or deferring of maintenance irregularities;
- Provision of flight planning information;
- Provision of operational flight plan;
- Security screening of passengers and carry-on baggage;
- Enplaning the passengers and their carry-on baggage;
- Marshalling, towing or assisting the aircraft in departing the gate;
- De-icing of the aircraft;
- Preparation of parking area for arrival of the aircraft
- Marshalling and parking of the aircraft after landing;
- Deplaning the passengers and their carry-on baggage;
- Off-loading of cargo and baggage;
- Provision of the baggage to the deplaned passengers;
- Security for the aircraft while parked;
- Communications as necessary associated with flight handling, departure and arrival;
- Retention of required records associated with flight handling, departure and arrival;
- Implementation of emergency procedures associated with an incident or accident; and
- Auditing of service providers to ensure that associated policies and procedures are being implemented by qualified persons.

15.1.2 COMPLEXITY OF GROUND HANDLING

15.1.2.1 The ground handling functions and responsibilities for their accomplishment exist even for small operators. For small operators though, the complexities of the events that must happen are masked by the fact that the pilot is routinely responsible for and accomplishes the majority of these functions.

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- 15.1.2.2 But the safe and efficient ground handling of the arrival and departure of a large aircraft with greater passenger and cargo capacity requires an orchestrated division of responsibilities and events between qualified persons.
- 15.1.2.3 This orchestration of the ground handling of a large aircraft should be controlled by a nucleus of operator personnel under the direction of a manager as envisioned by the regulations.
- 15.1.2.4 Where the operator chooses to provide most of these functions through ground handling service providers, the operator must incorporate into its procedures the responsibility for its own qualified personnel to monitoring and verification of critical points of those functions.
- a. For example, the securing of cargo nets, access ports, panels and doors used during the ground handling.

15.2 ASSIGNMENT OF RESPONSIBILITIES

- 15.2.1 It is critical that the operator provide specific assignment of responsibility for ground handling functions, especially those that are aircraft type-specific. Acceptable assignment of responsibility includes—

15.2.2 CREW RESPONSIBLE

- 15.2.2.1 The simplest form of discharging the ground handling responsibilities is to have the crew either do or continuously monitor the accomplish these function. Examples include—
- a. Crew member reviews the passengers' documents, determines their weight and their baggage weight, checks for possibility of dangerous goods or weapons or other unacceptable items and tickets them.
- b. Crew member determines and assigns seats based on the weight and size of the passengers
- c. Crew member either load the baggage and cargo or continuously monitors the loading process to ensure the items are properly loaded and secured with all exterior doors locked.
- d. Crew member either fuels the aircraft or continuously monitors the fueler to ensure proper grounding of aircraft, correct type of fuel, fuel upload, and the securing of the fuel caps and closing of any panels
- e. Crew member obtains and consolidates all flight information, completes and executes the flight preparation documents and ensures that copies of the documentation are securely left at the aerodrome.

15.2.3 OTHER QUALIFIED COMPANY PERSONNEL

- 15.2.3.1 As the ground handling situation becomes more complex, the operator may elect to have properly trained and qualified company personnel, in lieu of the crew, to accomplish or monitor the accomplishment most of the ground handling functions. Examples include—



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- a. Ticket agents review the passengers' documents, determine their weight and baggage weight, checks for the possibility of unacceptable items and tickets them;
- b. Gate agents (or cabin crew) determine and assign seats based on the weight and size of the passengers and their carry-on baggage or a prescribed loading schedule.
- c. A load controller either loads the baggage and cargo or continuously monitors the loading process to ensure the items are properly loaded and secured with all exterior doors locked.
- d. A qualified company agent either fuels the aircraft or continuously monitors the fueller to ensure proper grounding of aircraft, correct type of fuel, fuel upload, and the securing of the fuel caps and closing of any panels, with crew members verifying the load;
- e. Flight dispatchers obtain and consolidates all flight information the flight preparation documents and provide copies to the flight crew.

15.2.3.2 For most of these functions, the operator should consider having verification steps (by the crew) incorporated in the processes to ensure that all items critical to flight safety have been correctly accomplished.

15.2.3.3 Larger operators should conduct selective audits of the aerodromes and employees to ensure the ground handling processes are delivering a predictably correct result.

15.2.4 INTEGRATING SERVICE PROVIDERS INTO THE PROCESS

15.2.4.1 As the operator expands its schedule to more aerodromes, it may become more cost-efficient to use service providers that are located at the aerodrome and provide similar services for other operators. Examples include one or more of the following—

- a. A service provider's agents review the personal travel documents, determine their weight and baggage weight, checks for the possibility of unacceptable items and tickets the passengers;
- b. Gate agents determine and assign seats based on the weight and size of the passengers and their carry-on baggage or a loading schedule provided by a service provider.
- c. A service provider's load controller and loading personnel loads and secures the baggage and cargo ensuring all exterior doors locked, and provides the completed load manifest.
- d. A fuelling service provider ensures proper grounding of aircraft, correct type of fuel, fuel upload, fuels and secures the fuel caps and closing of any panels;
- e. Service providers provide the flight preparation information, including the operational flight plan the flight preparation documents and provide copies to the flight crew.

15.2.4.2 The operator may not abdicate its responsibility for the correct accomplishment of the functions. With these arrangements the operator should have—

- a. Pre-audits to ensure the service provider and its personnel have the capability;
- b. Verification steps by company employees incorporated in the ground handling processes; and
- c. Subsequent auditing that is external to the processes to determine that a predictably correct product has been occurring.

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15.3 GROUND HANDLING ORGANIZATION

15.3.1 The regulations requires the AOC holder to have adequate organizational structure to manage all ground handling functions, including—

- a. Ramp operations;
- b. Passenger services;
- c. Baggage services;
- d. Cabin services;
- e. Weight and balance control;
- f. Ground support equipment; and
- g. Fuel services.

15.3.2 The regulations also require the assignment of responsibility and authority to manage this part of the AOC holder's organization. The operators of large aircraft, especially for scheduled passenger operations, must have a discernible part of the organization that is assigned the responsibility and authority to manage these functions. The small air taxi operators may be issued waiver from these requirements if they do not conduct those operations from the terminal gates.

15.3.3 Depending on the extent to which the operator uses company personnel and service providers the actual number of persons required to manage the ground handling functions in an airline can vary from a large organization made up of company personnel or a smaller organization using managers to oversee a variety of service providers.

15.3.3.1 AOC holders at their hub may choose to provide most of the ground handling functions, but rely on service providers to fuel and galley services.

15.3.3.2 AOC holders providing scheduled code share or on-demand operations primarily for large airlines may choose to rely on their larger partner to provide most of the ground handling services.

15.3.3.3 AOC holders may choose to have a “virtual” presence on the ramp by using service providers for all ground handling functions identified by the regulations and this chapter.

15.3.4 By regulation the ground handling organization must be acceptable to CAASL-FS. Given all of the variations that an AOC holder may choose to use to provide ground handling, the evaluation of “acceptability” is somewhat subjective. An operator's ground handling organization may be determined to be acceptable, if—

- a. There is a ground handling organization with an overall manager;
- b. This organization has sufficient infrastructure (facilities, equipment and personnel) to discharge its responsibilities;
- c. The pertinent ground handling policies and procedures are provided in company manuals;
- d. There is an adequate training program to ensure that company and service provider personnel are qualified,
- e. There is discernible delegation and supervision of all ground handling functions as they are being accomplished;

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- f. There are adequate facilities and equipment available to provide ground handling support for the necessary ground handling of the aircraft;
- g. The ground handling processes are subject to periodic audits to ensure that the delivered results are compatible with the established policies and standard of performance;

15.4 MANAGER OF GROUND OPERATIONS

15.4.1 REGULATORY REQUIREMENTS

15.4.1.1 Air Navigation Regulations require that an AOC holder will have an assigned person acceptable to CAASL-FSS, who is responsible for the management and supervision of ground handling operations.

15.4.1.2 While the Vietnam regulations list this position as one of the five key managers of an AOC holder, CAASL-FS recognizes that the complexity of the AOC holder's operations could result in a—

- a. Director of ground handling with numerous supervisors (large organization), or
- b. Single individual having multiple supervisory roles (a single-pilot air taxi). or
- c. Variations between the large organization and the single individual.

15.4.1.3 The regulations give CAASL-FS the authority to grant waivers to this particular requirement if the operator can provide logical justification for such a waiver that will not conflict with the safety intent of the regulation.

15.4.2 EVALUATION OF GROUND OPERATIONS MANAGER NOMINATION

15.4.2.1 Proven Competency

- a. The regulations require that the manager for ground handling must have “proven competency in civil aviation.” The regulations do not, however, provide specific requirements as are provided in the Director of Operations or Chief Pilot.

15.4.2.2 The CAASL-FS evaluation of the nominated manager will be primarily that he or she—

- a. Was not previously a required manager of an AOC holder whose certificate was revoked;
- b. Has experience as a manager or supervisor in an aviation organization;
- c. Has experience in one or more functions of ground handling;
- d. Is able to describe in detail the company policies and processes for ground handling and locate pertinent portions of these in the company manuals;
- e. Is able to describe the timing and interaction of the ground handling functions in during the departure and arrival of the aircraft;
- f. Is able to describe the purpose of the ground handling audit processes and the resolution of identified issues.



15.4.2.3 **Accept or Reject Nomination**

- a. A decision to reject the nomination of the manager of a ground handling organization should be made in a formal letter stating the reasons for the b.
- b. A decision to accept the nomination of the manager of ground handling organization will also be made by formal letter.

15.4.2.4 **Grant of Waiver**

- a. If a company requests that the duties and responsibilities of the Manager of Ground Operations be assigned to a person who already has other critical aviation duties and responsibilities, the assigned operations inspector will evaluate the extent to which the operator could function without a dedicated Manager of Ground Operations.
- b. That evaluation will be based on the complexity of the company operations being conducted.
- c. The following factors are routine justification for the waiver—
 - Aircraft with 19 passengers or less;
 - That will not be using the terminal gates;
 - That will be receiving support from another entity for their ground handling functions; and/or
 - Will not be operating on a schedule that includes gate turnarounds of less than 1 hour from arrival to departure.

15.5 **AIRCRAFT HANDLING MANUAL**

15.5.1 **GENERAL MANUAL GUIDANCE**

15.5.1.1 The regulations require that an AOC holder shall have an “Aircraft Handling Manual” acceptable to the Authority which includes, for all ground handling operations—

- a. Handling processes, procedures and practices;
- b. Training programme requirements; and
- c. Subcontracting policies.

15.5.1.2 This manual will be in addition to the required aircraft type-specific manual(s) that provide the specific requirements for—

- a. Fuelling;
- b. Servicing;
- c. Loading;
- d. Mass and balance;
- e. Dangerous Goods

15.5.2 **SCOPE OF THE GROUND OPERATIONS DOCUMENTATION**

15.5.2.1 Each manual or publication submitted will be evaluation to ensure that it includes that information and guidance necessary to allow personnel to perform their duties and responsibilities effectively and safely.

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15.5.2.2 Depending on the complexity of ground operations conducted at a station, the scope of the required submissions of manual(s) and documentation may include—

- a. Operation of ground service equipment/procedures
- b. Security training and procedures
- c. Ticketing and gate procedures
- d. Passenger handling procedures
- e. carry-on baggage procedures
- f. General aircraft movement procedures, including marshalling and parking requirements
- g. Company and aircraft-specific towing procedures
- h. Company and aircraft-specific refuelling procedures
- i. Company and aircraft-specific servicing procedures
- j. Company and aircraft-specific loading procedures
- k. Company and aircraft-specific mass and balance calculation procedures
- l. Company and aircraft-specific takeoff, en-route and landing computation
- m. Approved Flight Manual (AFM) for company aircraft
- n. Company and service provider training programs
- o. Company and service provider emergency response procedures, including current emergency telephone listing
- p. Company and service provides accident/incident telephone listing
- q. Severe weather notification procedures
- r. General and aircraft-specific de-icing procedures
- s. Identification or handling of hazardous materials/procedures
- t. Instructions and procedures for NOTOC when there are hazardous materials aboard
- u. Procedures for passenger operation of electronic devices
- v. Listing of approved service providers and their contracted functions
- w. Company (if applicable, service provider) procedures for disposition and retention of official records.

15.5.3 OTHER DOCUMENTS THAT SHOULD BE EVALUATED

15.5.3.1 Proposed Records

- a. The applicant should provide copies of the proposed records relative to ground handling and station operations,
- b. These records should include all records proposed to be generated during ground operations, including those addressing communications, fuelling, servicing, loading, flight preparation and personnel training records.

15.5.3.2 Proposed Training Programs

- a. The inspector should evaluate the training curriculums provided for the various groupings of ground handling and station personnel.
- b. While the regulations do not specify training requirements either by subject or frequency for ground handling personnel, the curriculums, curriculum segments and training elements should be logical for the technical functions and supported by the technical manuals.

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- c. This training may be both formal classroom training or on the job training. Specific areas of training include the following for each function—
- Duties and responsibilities
 - Safety practices
 - Dangerous goods
 - Passenger handling and protection
 - Load planning and weight and balance procedures
 - Communications procedures
 - First aid and emergency actions

15.5.3.3 Contingency Plans

- a. Emergency response contingency plans should be submitted for the possible emergencies that may be encountered by the station and ground handling personnel.
- b. These may be submitted as manual(s) or checklists, and should include—
- Accidents
 - Injuries
 - Illness
 - Fuel spills
 - Bomb threats
 - Hijacking
 - Severe weather
 - Dangerous goods leakage/spills

15.6 GROUND HANDLING SERVICE PROVIDERS

15.6.1 BACKGROUND

15.6.1.1 In today's aviation environment, even large carriers are no longer self-sufficient in their operations. The use of service providers for many different tasks has become the norm, rather than the oddity. This is especially true in ground handling because of the aerodrome-specific advantages.

15.6.1.2 Even the most independent operators routinely use service providers for fuelling, kitchen and galley serving, and water and lavatory servicing of aircraft. But the use of service providers for ticketing and gate services, baggage handling, ramp services and aircraft cleaning and loading. And, if these tasks are performed correctly, efficiently and safely, can allow the operator to remain more flexible in their operations.

15.6.1.3 By regulation, the AOC holder shall have processes for continuously ensuring the proper and adequate ground handling for their aircraft when all or part of the functions and tasks related to ground handling services have been contracted to a service provider.

15.6.1.4 By regulation, the AOC holder is required to provide to CAASL-FS a current and acceptable list of the service providers and the functions they have been contracted to perform on behalf of the AOC holder sorted by aerodrome location.

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15.6.2 EVALUATION OF SERVICE PROVIDER ARRANGEMENTS

15.6.2.1 At least 15 working days prior to the use of a service provider, the AOC holder must submit to CAASL-FS with a copy of the agreement containing the proposed arrangements for the services to be provided.

15.6.2.2 CAASL-FS will review that agreement with emphasis on the—

- a. Parties to the agreement;
- b. Function(s) that will be provided by the service provider;
- c. Contact points in each organization for on-going arrangements between the parties
- d. Policy/procedure guidance that will be used by the service provider and its personnel during the conduct of the services provided to the AOC holder;
- e. Requirements for initial and recurrent training of the service provider's personnel for the functions they will perform for the AOC holder, especially those aircraft type-specific functions;
- f. Requirement that the services may be terminated if the services are not provided to a satisfactory standard;
- g. Unrestricted right of the operator to audit the service provider, the performance of its personnel, facilities and equipment and required records;
- h. Unrestricted right of CAASL-FS inspectors to audit the service provider, the performance of its personnel, its facilities and equipment and required records;
- i. The provisions for timely resolution of issues identified during the audit process.

15.6.3 COMPLETION OF THE EVALUATION

15.6.3.1 If the arrangements are not acceptable to CAASL-FSS, the assigned inspector will—

- a. Issue a short letter to that effect;
- b. Provide the CAASL-FSR notes as an attachment to that letter; and
- c. Make a CAA Action entry to record the completion of the task.

15.6.3.2 If the arrangements are acceptable, the assigned inspector will—

- a. Issue a short letter to that effect;
- b. Make a General Inspection Database entry; and
- c. Make a CAA Action entry to record the completion of the task.



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Chapter 16 - GROUND HANDLING, STATIONS & AERODROMES

16.1 GROUND HANDLING INSPECTIONS

16.1.1 GENERAL

16.1.1.1 Ground handling operations are defined as those support activities required to originate, turn around, or terminate a flight.

- a. The purpose of the ground handling inspections is to assess the acceptability as it pertains to the operation under consideration of various navigation, communications-meteorological facilities and equipment, related operational control procedures and ground services and to evaluate the competency of the assigned staff to operate them.
- b. The objective is to ascertain that these facilities meet established requirements, that they are properly managed by qualified staff and that the required records are properly maintained.
- c. Ground handling and facilities inspections should be conducted at every location at which an AOC holder initiates and turns scheduled flights with passengers. Ground handling inspections should also be conducted selectively at other locations where the operator performs or arranges for ground handling personnel, facilities, equipment and services in connection with its operations.

16.1.2 THREE-STAGE APPROACH TO THE INSPECTIONS

16.1.2.1 Preferably these inspections should be conducted in three stages—

- a. Inspect the AOC holder's infrastructure at the airport, including service provider arrangements, for acceptable facilities, equipment, personnel and policy/procedure manuals;
- b. Inspect the training and operational records that are located at the airport, including the service provider's records, to ensure that the personnel are qualified; and
- c. Inspect actual departure or arrival operations in progress in order to obtain an over-all view of the operation of the station and the effectiveness of the personnel, equipment, services, procedures and service providers utilized.

16.1.2.2 The FS inspector should review operator and service provider staffing and the assignment of various duties with the operator's representative or service providers at the station.

16.1.2.3 During this inspection a review should be made of the pertinent manuals (operations, maintenance, training, routes, etc.) to determine if they are readily available and current.

16.1.2.4 The primary focus will be the demonstrated competency and knowledge of the personnel—

- a. Personnel responsible for various duties should be queried regarding their familiarity with those operator instructions applicable to them and a determination made as to how competently they are performing their assigned duties.

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- b. The operator's routine and emergency procedures for the operations of the station and related facilities must be reviewed and discussed with personnel concerned.

16.1.3 INSPECTION AREA

16.1.4 Nine inspection areas have been identified as areas for inspectors to observe and evaluate during ground handling and station inspections. These inspection areas are—

- a. **Personnel.** This area refers to the personnel employed at the facility. Inspectors must evaluate the adequacy of staffing levels and the competency of assigned personnel in the performance of their duties.
- b. **Manuals.** This area refers to the availability, currency, and content of the written guidance required by employees in the performance of their assigned duties.
- c. **Records.** This area refers to those records that the operator is required to maintain relative to station activities. For example, operators are required to record hazardous material training for operations personnel. This area does not include those records inspected during a "records inspection."
- d. **Training.** This area refers to the adequacy of the training given to assigned personnel as demonstrated by their knowledge of their duties. This area does not include crew and dispatcher training.
- e. **Facility/Equipment/Surface.** This area refers to the various physical elements required to support flight operations, such as ramp areas, blast fences, signs, signalling devices, lighting, passenger and cargo loading equipment, aircraft servicing, towing equipment, ground de-icing and anti-icing.
- f. **Conformance.** This area refers to the operator's employees' compliance with the operator's procedures and the applicable aviation laws and regulations.
- g. **Operational Control.** This area refers to the control and support of aircraft flight operations.
- h. **Servicing.** This area refers to the operator's procedures and standards required for the safe servicing and handling of its aircraft.
- i. **Management.** This area refers to the effectiveness of the operator's management and supervisory personnel.

16.2 MANAGEMENT OF GROUND HANDLING & STATION INSPECTIONS

16.2.1 FOIs and AWE inspectors are responsible for planning and coordinating ground handling and station inspections in their areas of responsibility.

16.2.2 FOIs shall ensure that ground handling and station inspections are planned as required inspection items in the Minimum Required Annual Inspection program for each station in the unit's area of responsibility.

16.2.3 When an operator establishes a new station, the D (Ops) and the D (Aw) must coordinate the inspection plan before the inspection is conducted. FOIs do not have to plan station facilities inspections of Scheduled AOC holders that contract to use facilities within the geographic area for a single flight or a short series of flights.

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- 16.2.4 The D (Ops) is responsible for conducting the inspection; however, the D (Ops) may decide to include one or more inspectors on the team to ensure that appropriate guidance is available, and for standardization purposes.

16.3 GENERAL INSPECTION PRACTICES & PROCEDURES

- 16.3.1 Inspectors who conduct ground handling and station inspections encounter a wide range of situations and operational conditions. Station facilities range from large (that have a permanently assigned station manager, numerous employees, and various departments) to a single counter manned by a single employee.

- 16.3.2 A ground handling and station inspection may be conducted to provide an overall view of operations, or it may be focused on a specific area of interest. Inspectors should use the direction, guidance, and procedures that follow when conducting a ground handling and station inspection

16.3.3 PLANNING FOR THE INSPECTION

- 16.3.3.1 The inspector should carefully plan a ground handling and station inspection before conducting it. The inspector should review previous inspection reports, identify any areas of weakness previously reported, and review the corrective actions that were taken.

- 16.3.3.2 Other inspectors get a briefing from the appropriate FOI to determine if there are any specific areas that may currently need inspection.

The inspector should coordinate with the station manager (or service provider representative) ahead of time to establish a date and time for conducting the inspection.

16.3.4 BRIEFING FOR THE INSPECTION

- 16.3.4.1 Before beginning the inspection, the inspector should request that the station manager provide a briefing on the ground handling operations, including the assigned personnel and operational procedures.

- 16.3.4.2 In turn, the inspector should brief the station manager, his staff (and representatives of the service providers) on the purpose and scope of the inspections.

- 16.3.4.3 This discussion should include the following points—

- a. Purpose of the facility inspection
- b. Introduction of inspectors
- c. The specific areas to be inspected
- d. Inspection authority
- e. The proposed time and place of the exit briefing



16.3.5 PRELIMINARY TOUR

- 16.3.5.1 The actual inspection should begin with a tour. The tour should provide the inspector with an overview of the operation and the location of individuals and entities associated with ground handling and other station function.
- 16.3.5.2 Inspectors should introduce themselves to supervisors and other employees during this tour to become familiar with each pertinent location.
- 16.3.5.3 The tour should include those areas that are utilized by the flight and cabin crews for dispatch, briefing, and flight planning, and those areas that are utilized for passenger loading, cargo loading, weight and balance preparation, and ramp areas.

16.4 SPECIFIC INSPECTION PRACTICES & PROCEDURES

16.4.1 CHECKLISTS

- 16.4.1.1 Inspectors should use the checklists for ground handling and station operations during the inspection. This checklist provides inspectors with "reminder" items to check when they evaluate specific areas.
- 16.4.1.2 There also may be items on the checklist which are not observed and should, therefore, be identified as "NS=Not Seen."
- 16.4.1.3 The checklist is designed solely as a reminder and as a means of standardization to ensure that station facilities inspections are conducted in the same general manner. Inspectors should conduct station facilities inspections by using the procedures that follow.

16.4.2 PERSONNEL

- 16.4.2.1 The inspector should review the operator and service provider staffing. During this review, the inspector should attempt to determine whether or not there is adequate staffing and whether or not assigned personnel are competent in their duties.
- 16.4.2.2 The inspector may accomplish this by observing individuals as they perform their assigned job tasks.
- a. For example, the inspector may review recently completed forms for accuracy and may interview personnel, while being careful to avoid interfering with their duties.

16.4.3 MANUALS

- 16.4.3.1 The inspector should review the operator (and service providers) manuals determine whether or not the manuals are on hand, current, readily available to personnel, and adequate in content.



16.4.4 ON-HAND REQUIREMENTS

- 16.4.4.1 Inspectors should determine what manuals the operator requires its station personnel and service providers to maintain and then determine whether or not these manuals are on hand.
- 16.4.4.2 As a result of the inspection, the inspector should be able to conclude that either these manuals are sufficient for the purposes of the station or that station personnel require additional information which was not available.

16.4.5 CURRENCY REQUIREMENTS

- 16.4.5.1 The inspector should also ensure that the operator and service provider's manuals are current and that any required revisions are accurately posted.
- 16.4.5.2 The inspector should obtain information on the revision status of manuals from the FOI before beginning the inspection.

16.4.6 CONTENT REQUIREMENTS

- 16.4.6.1 Each manual or publication should be checked by the inspector to ensure that it includes that information and guidance necessary to allow personnel to perform their duties and responsibilities effectively and safely.
- 16.4.6.2 Depending on the scope of operations conducted at the station, direction and guidance may be required in the following operational areas—
- a. Operation of ground service equipment/procedures
 - b. Security training and procedures
 - c. Ticketing and gate procedures
 - d. Passenger handling procedures
 - e. Carry-on baggage procedures
 - f. General aircraft movement procedures, including marshalling and parking requirements
 - g. Company and aircraft-specific towing procedures
 - h. Company and aircraft-specific refuelling procedures
 - i. Company and aircraft-specific servicing procedures
 - j. Company and aircraft-specific loading procedures
 - k. Company and aircraft-specific mass and balance calculation procedures
 - l. Company and aircraft-specific takeoff, enroute and landing computation
 - m. Approved Aircraft Flight Manual (AFM) for company aircraft
 - n. Company and service provider training programs
 - o. Company and service provider emergency response procedures, including current emergency telephone listing
 - p. Company and service provides accident/incident telephone listing
 - q. Severe weather notification procedures
 - r. General and aircraft-specific ground de-icing procedures (depending on location)

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- s. Identification or handling of hazardous materials/procedures
- t. Instructions and procedures for NOTOC when there are hazardous materials aboard
- u. Procedures for passenger operation of electronic devices
- v. Listing of approved service providers and their contracted functions
- w. Company (if applicable, service provider) procedures for disposition and retention of official records.

16.4.7 RECORDS

16.4.7.1 Available records relative to ground handling and station operations should be inspected, such as communications, fuelling, servicing, loading, flight preparation and personnel training records.

16.4.7.2 In a small facility, a records inspection and a facility inspection could be conducted on the same day. In most facilities, however, the ground handling and station inspections should be planned and conducted separately.

16.4.8 TRAINING

16.4.8.1 The inspector should review the training conducted for the various groupings of ground handling and station personnel. The regulations do not specify training requirements either by subject or frequency for station personnel, yet these personnel should receive both initial and recurrent training in assigned job functions.

16.4.8.2 This training may be either formal classroom training or on the job training. Specific areas of training include the following—

- a. Duties and responsibilities
- b. Hazardous materials
- c. Passenger handling and protection
- d. Load planning and weight and balance procedures
- e. Communications procedures
- f. Manual backup procedures in case of computer or communications equipment failures
- g. Aircraft servicing and ramp operations
- h. First aid and emergency actions

16.4.9 FACILITY/EQUIPMENT/SURFACE

16.4.9.1 The facilities must be adequate to provide safe operating conditions for both aircraft and personnel. The inspector should conduct an evaluation to ensure that the following conditions are met—

- a. **Ramp Maintenance.** Ramp areas should be clean and clear of foreign objects. The operator should have a regular program for inspecting, cleaning, and repainting ramp surfaces. Adequate equipment must be available for snow removal.
- b. **Passenger Safety.** Employees and passengers must be protected from jet or prop blast. If a jet way is unavailable or not used, inspectors should evaluate passenger handling procedures and facilities and give particular attention to the movement of passengers across ramps. The operator must have established procedures for assisting handicapped passengers, especially when boarding ramps are not used.

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- c. **Night Operations.** To ensure that adequate lighting is available and is being used for safe ground operations, inspectors should conduct observations during night operations, if feasible.
- d. **Station & Ground Handling Manager Responsibilities.** The operator's management usually assigns managers with the responsibility for maintaining surveillance of the airport and for reporting airport hazards and any new obstructions. Inspectors should determine what responsibilities have been assigned to the station manager and how those responsibilities are being discharged.
- e. **Airport Deficiencies.** Inspectors are not tasked with conducting a physical inspection of the airport during a station facilities inspection; however, any airport deficiencies observed during a station facilities inspection must be noted by inspectors.

16.4.10 CONFORMANCE

- 16.4.11 In each area to be inspected, inspectors should evaluate the operator's procedures for compliance with provisions of the applicable AARS Parts. In addition, the operator and service provider employees must comply with the operator's directives as provided for in the operator's manuals.

16.4.12 FLIGHT CONTROL

- 16.4.12.1 The inspection of a station's flight control function should be conducted while actual arrival or departure operations are in progress. This allows the inspector to get an overall view of the effectiveness of the operation and its assigned personnel.

16.4.13 OPERATIONAL CONTROL INSPECTION

- 16.4.13.1 When a dispatch or flight following centre is located within the station, an operational control inspection should be conducted in conjunction with the station facilities inspection.
- 16.4.13.2 Unless the station is small, these two inspections should be planned and conducted as separate events.
- 16.4.13.3 **Line Station Functions**
- a. Operators often exercise operational control from a central location and assign the line stations with related support functions, such as delivering dispatch releases and flight plans to the flight crew.
 - b. In this situation, inspectors should determine which functions are the responsibility of the station. Inspectors should evaluate station personnel in the performance of these functions.
 - c. Inspectors should also evaluate the effectiveness of the division of responsibility between the central operational control centre and the line stations.

16.4.14 LOAD PLANNING

- 16.4.14.1 Inspectors should determine who is assigned responsibility for load planning and weight and balance control.

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- a. Passenger and cargo weights must be accurate and reliably obtained, collected, and transmitted.
- b. Personnel must be adequately trained.
- c. Procedures should be simple and effective.

16.4.14.2 When computerized systems are used, there must be adequate backup provisions for computer failure.

- a. When personnel are required to perform manual calculations in case of computer failure, the operator must ensure continued proficiency of personnel in making these calculations.
- b. Inspectors should ask these individuals to perform a manual calculation and compare the individual's solution to the computer solution.

16.4.15 WEATHER INFORMATION

16.4.15.1 Inspectors should determine the approved source of weather for the station.

16.4.15.2 If weather information is provided by a supplementary aviation weather reporting station, the inspector should determine that the weather station is receiving adequate oversight.

16.4.16 SERVICING

16.4.16.1 The servicing area of a station facilities inspection covers routine loading and servicing as opposed to aircraft maintenance activities.

16.4.16.2 Inspectors should evaluate areas of concern to operations personnel, such as the manner in which logbooks are handled and how MEL/CDL provisions are administered.

16.4.16.3 The inspector should observe and verify safe practices in the operator's service operations and that adequate personnel are available for the required aircraft servicing.

- 16.4.16.4 Operations to be observed should include, but are not limited to, the following—
- a. Fuelling (ensuring that proper procedures are being followed)
 - b. De-icing (ensuring that the correct ratio and temperature of the glycol/water mix is being used and that all snow and ice is removed)
 - c. Marshalling (ensuring safe operation and correct procedures)
 - d. Chocks/Mooring (ensuring chocks are in place, the parking ramp is relatively level, and brakes are set or released)

16.4.17 MANAGEMENT

16.4.17.1 Throughout the inspection, inspectors should observe managers and supervisors and evaluate the organizational relationships, particularly the effectiveness of vertical and horizontal communications.

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16.4.17.2 Managers and supervisors should be thoroughly aware of their duties and responsibilities and those of the personnel they supervise.

16.4.17.3 Areas that inspectors must observe and evaluate include the following—

- a. **Service Providers.** If the operator contracts with other companies for certain functions and services, the station manager should have established adequate controls over their performance.
- b. **Contingency Plans.** The management should be prepared for contingencies. Action plans should be available for use in case of such events as accidents, injury, illness, fuel spills, bomb threats, hijacking, severe weather, and hazardous material spills.
 - Station personnel should know the location of these plans. Plans should contain emergency notification checklists and procedures for suspending or cancelling operations.
 - Emergency telephone listings should be posted in obvious locations and be clearly legible.



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APPENDIX 16-A

CAA/OP/CL/002



CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Ground Handling & Station Inspections Checklist/Report

Date		Location	
Operator		Inspector	
		Operator rep.	

For completion instructions, refer to Chapter 15 & 16 of the Operations Inspector Handbook

Y = YES

N = NO

NS = NOT SEEN

NA = NOT APPLICABLE

<i>Check YES column if you reviewed the record, procedure or event and have no comment</i>
<i>Check NO column if you reviewed the record, procedure or event and have a comment</i>
<i>Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment</i>
<i>Check NOT APPLICABLE column if the line item is not required in this particular Operator</i>
<i>Make notes regarding a NO answer for resolution</i>

GROUND OPERATIONS MANUAL	1	S	U	N	NA	REMARKS/NOTES
A statement that the ground operations manual complies with applicable laws and AOC conditions	1.1					
A list and a summarized description of the different parts of the manual, their contents, applicability and utilization.	1.2					
A statement that the operations manual contains ground operating instructions which are required to be complied with by all personnel.	1.3					
A registration sheet for the amendments and revisions with the dates of registration and validity.	1.4					
A list of effective pages.	1.5					
Amendment and revision changes indicated by marks or signals in text, graphics and diagrams.	1.6					



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Instructions outlining the organizational structure, responsibilities of management and operations personnel pertaining to the conduct of ground operations ensuring duties, responsibilities, functional tasks, lines of reporting and authorities are clearly defined	1.7					
CONFORMANCE WITH RELEVANT STANDARDS	2	S	U	N	NA	REMARKS/NOTES
Were all personnel and documents in conformance with aviation law and regulations?	2.1					
Were the operations found to be in conformance with applicable /ICAO Standards	2.2					
Were there any practices that did not conform to published relevant safety practices?	2.3					
STATION STAFF (INCLUDING SERVICE PROVIDERS)	3	S	U	N	NA	REMARKS/NOTES
Is there adequate staff to handle the required support functions?	3.1					
Did all staff demonstrate competent performance in their function?	3.2					
Did the staff follow the proper procedures for the functions they performed?	3.3					
Did the company and service provider training and qualification records show that all personnel were adequately trained for their functions?	3.4					
Were the station staff engaged in all areas of ground handling function adequately trained and qualified to carry out their responsible functions	3.5					
EQUIPMENT & FACILITIES	4	S	U	N	NA	REMARKS/NOTES
Were there adequate facilities and equipment for the complexity and functions performed?	4.1					
Have mobile equipment to be utilized in the operation such as Fuelling Vehicles, Ground Power Units, Oxygen and Compressed Gas Servicing Equipment, Towing Tugs, Cargo and Baggage Handling	4.2					



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Equipment, Catering Vehicles, Sanitary Servicing Trucks, De-Icing Equipment, etc. been inspected with primary emphasis on adequacy, suitability and the safety aspects of its use?						
PASSENGER HANDLING	5	S	U	N	NA	REMARKS/NOTES
Were adequate guidance and procedure manuals available for the persons performing this function?	5.1					
Were qualified personnel available to accomplish this function for each flight?	5.2					
Were the passenger ticketing and baggage acceptance performed satisfactorily	5.3					
Were the passengers and baggage weighed before emplaning?	5.4					
Was the handling of passenger enplaning and deplaning performed satisfactory?	5.5					
Were the passenger security measures satisfactory?	5.6					
If a jet way was not used, was a designated walk route with adequate guide persons available to ensure passenger ramp safety?	5.7					
AIRCRAFT MOVEMENT ON RAMP	6	S	U	N	NA	REMARKS/NOTES
Were adequate guidance and procedure manuals available for the persons performing this function?	6.1					
Were qualified personnel available to accomplish this function for each flight?	6.2					
Was the marshalling of aircraft performed satisfactorily?	6.3					
Were the ramp and gate areas properly marked for towing, taxiing and parking position?	6.4					
Was the aircraft parking area clear of carts and other vehicles during the parking of the aircraft?	6.5					
Was the towing of the aircraft performed satisfactorily?	6.6					
Were security measures for identification of all ramp personnel clearly available?	6.7					
If a service provider was used to perform this function, were						



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the arrangements, guidance and qualification of personnel acceptable?	6.8					
AIRCRAFT SERVICING	7	S	U	N	NA	REMARKS/ NOTES
Were adequate guidance and procedure manuals available for the persons performing functions involved?	7.1					
Were qualified personnel available to accomplish these functions for each flight?	7.2					
Was the servicing of aircraft performed satisfactorily?	7.3					
Was the fuelling of aircraft performed satisfactorily?	7.4					
Was the loading of aircraft performed satisfactorily?	7.5					
Was the de-icing of aircraft performed satisfactorily?	7.6					
Was the equipment used to perform these functions operational, adequate for the task, and operated knowledgeably by the personnel involved?	7.7					
Were security measures for identification and monitoring of all servicing personnel satisfactory?	7.8					
If service providers were used to perform these functions, were the arrangements, guidance and qualification of personnel acceptable?	7.9					
AIRCRAFT OVERNIGHT PARKING	8	S	U	N	NA	REMARKS/ NOTES
Were adequate guidance and procedure manuals available for the persons performing this function?	8.1					
Were qualified personnel available to accomplish this function for each flight?	8.2					
Was the aircraft properly lighted and identifiable as required for the parking location?	8.3					
Was the aircraft “guarded” by assigned persons at all times?	8.4					
If a service provider were used to perform these functions, were the arrangements, guidance and qualification of personnel acceptable?	8.5					
MASS, BALANCE & PERFORMANCE COMPUTATIONS	9	S	U	N	NA	REMARKS/ NOTES



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Were adequate guidance and procedure manuals available for the persons performing this function?	9.1					
Were qualified personnel available to accomplish this function for each flight?	9.2					
Were the correct procedures for passenger loading, count and communication of the positioning followed?	9.3					
Were specific passenger seat assignments used to ensure a safe C.G. for flight?	9.4					
Were the correct procedures for cargo loading, and communication of positioning followed?	9.5					
Were the correct procedures for dangerous goods loading, and communication of positioning (e.g. NOTOC) followed?	9.6					
Were the mass and balance calculations & procedures satisfactory?	9.7					
Were the last-minute mass and balance revisions due to passengers or cargo handled correctly?	9.8					
Were the take-off and landing performance calculations performed Correctly?	9.9					
If a service provider were used to perform these functions, were the arrangements, guidance and qualification of personnel acceptable?	9.10					
FLIGHT PLANNING	10	S	U	N	NA	REMARKS/ NOTES
Were adequate guidance and procedure manuals available for the persons performing this function?	10.1					
Were qualified personnel available to accomplish this function for each flight?	10.2					
Was the weather acquisition (including selection of alternates) and briefing of crews performed correctly?	10.3					
Was the NOTAM acquisition and briefing of crews performed correctly?	10.4					
Was the operational flight plan (including fuel loading)	10.5					



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calculations and procedures performed correctly?						
If a service provider were used to perform one or more of these functions, were the arrangements, guidance and qualification of personnel acceptable?	10.6					
COMMUNICATIONS	11	S	U	N	NA	REMARKS/NOTES
Were adequate guidance and procedure manuals available for the persons performing this function?	11.1					
Were qualified personnel available to accomplish this function for each flight? Was there adequate communications capability with main base operations and maintenance functions, including relay of information?	11.2					
Was there adequate communications capability with main base operations and maintenance functions, including relay of information?	11.3					
Were flight following procedures performed correctly?	11.4					
Were emergency response procedures performed correctly?	11.5					
Were accident/incident procedures performed correctly?	11.6					
Were the correct numbers for telephone and/or fax notifications associated with emergency response available?	11.7					
If a service provider were used to perform one or more of these functions, were the arrangements, guidance and qualification of personnel acceptable?	11.8					
MAINTENANCE	12	S	U	N	NA	REMARKS/NOTES
Were adequate maintenance guidance and procedure manuals available for the level of maintenance to be performed?	12.1					



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Were qualified maintenance personnel available to accomplish the level of maintenance to be performed?	12.2					
Was the performance and recording of routine maintenance satisfactory?	12.3					
Was the performance and recording of deferred maintenance satisfactory?	12.4					
If a service provider was used to perform this function, were the arrangements, guidance and qualification of personnel acceptable?	12.5					
RECORDS RETENTION & ACCURACY	13	S	U	N	NA	REMARKS/NOTES
Were the flight preparation and other official records up-to-date and correctly filed?	13.1					
Was there adequate file retention security for official records?	13.2					
PASSENGER HANDLING IN TERMINAL	14	S	U	N	NA	REMARKS/NOTES
Acceptable procedures for identification and seat allocation for handicapped persons?	14.1					
Seat allocation for infants and children?	14.2					
Scales for weighing baggage and cargo?	14.3					
Procedures for identification and prevention of carriage of Dangerous Goods by passengers	14.4					
Procedures for checking and prevention of passengers Carrying restricted items on-board	14.5					
Appropriate system for control of loose articles in the cabin (carry-on baggage)?	14.6					
PASSENGER RAMP SAFETY	15	S	U	N	NA	REMARKS/NOTES
DAY – Air bridge/directions to board	15.1					
NIGHT – Air bridge/directions to board	15.2					
DAY – Proper positioning of steps?	15.3					
NIGHT – Proper positioning of steps?	15.4					
DAY – Staff in attendance with passengers?	15.5					
NIGHT - Staff in attendance with passengers?	15.6					



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DAY – Protection from jet blast?	15.7					
NIGHT – Protection from jet blast?	15.8					
DAY – Clearance from propellers?	15.9					
NIGHT – Clearance from propellers?	15.10					
DAY – Clear of taxiing aircraft?	15.11					
NIGHT – Clear of taxiing aircraft?	15.12					
DAY – Clear of moving vehicles?	15.13					
NIGHT – Clear of moving vehicles?	15.14					
DAY – Positioning of service vehicles?	15.15					
NIGHT – Positioning of service vehicles?	15.16					
DAY – Are there safety routes available for emergency evacuation	15.17					
NIGHT – Are there safety routes available for emergency evacuation	15.18					
CREW COORDINATION WITH LOAD CONTROL	16	S	U	N	NA	REMARKS/NOTES
Are passengers occupying their assigned seats?	16.1					
Was a head count compared to load manifest for accuracy?	16.2					
GROUND HANDLING ARRANGEMENTS/PROCEDURES	17	S	U	N	NA	REMARKS/NOTES
Availability of Ground Handling Procedures	17.1					
Ticketing procedures	17.2					
Checking procedures	17.3					
Checked luggage handling procedures	17.4					
Unaccompanied luggage handling procedures	17.5					
Denied Boarding procedures	17.6					
CATERING ASPECTS	18	S	U	N	NA	REMARKS/NOTES
Sanitary	18.1					
Security (including nature of utensils provided)	18.2					



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Remarks:	
OVERAL RESULT: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory	Inspectors Signature;



Appendix 16B

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Air Operator Passenger Handling Inspection Checklist/Report CAA/OP/CL/069

Date		Location	
Operator		Inspector	
		Operator Rep.	

S-Satisfactory

U-Unsatisfactory

N-Not Observed

NA-Not Applicable

PASSENGER HANDLING IN TERMINAL	1	S	U	N	NA	REMARKS/NOTES
Acceptable procedures for identification and seat allocation for handicapped persons?	1.1					
Seat allocation for infants and children?	1.2					
Scales for weighing baggage and cargo?	1.3					
Appropriate system for control of loose articles in the cabin (carry-on baggage)?	1.4					
PASSENGER RAMP SAFETY	2	S	U	N	NA	
DAY – Air bridge/directions to board	2.1					
NIGHT – Air bridge/directions to board	2.2					
DAY – Proper positioning of steps?	2.3					
NIGHT – Proper positioning of steps?	2.4					
DAY – Staff in attendance with passengers?	2.5					
NIGHT - Staff in attendance with passengers?	2.6					
DAY – Protection from jet blast?	2.7					
NIGHT – Protection from jet blast?	2.8					



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DAY – Clearance from propellers?	2.9					
NIGHT – Clearance from propellers?	2.10					
DAY – Clear of taxiing aircraft?	2.11					
NIGHT – Clear of taxiing aircraft?	2.12					
DAY – Clear of moving vehicles?	2.13					
NIGHT – Clear of moving vehicles	2.14					
DAY – Positioning of service vehicles?	2.15					
NIGHT – Positioning of service vehicles?	2.16					
DAY – Are there safety routes available for emergency evacuation	2.17					
NIGHT – Are there safety routes available for emergency evacuation	2.18					
CREW COORDINATION WITH LOAD CONTROL	3	S	U	N	NA	
Are passengers occupying their assigned seats?	3.1					
Was a head count compared to load manifest for accuracy?	3.2					

Remarks:	
OVERAL RESULT: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory	Inspectors Signature;



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Chapter 17 - Ground De-icing Programs

17.1 GENERAL

17.1.1 The regulations requires that an operator conducting operations when conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft must satisfy the following criteria—

- a. Have and use an approved aircraft ground de-icing/anti-icing programme; or
- b. Be issued an authorisation which requires the operator to perform an outside the aircraft check (OTAC) within 5 minutes prior to beginning takeoff to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow.
- c. To be eligible for approval, the OTAC procedure for all aircraft must include a provision for close visual scrutiny of selected portions of all of the critical surfaces of the particular type aircraft to be checked.
 - a. Operators who elect to operate under an OTAC authorization must have the procedures for their OTAC in their appropriate manuals and be approved by the principal operations inspector (FOI) prior to conducting operations when frost, ice, or snow may reasonably be expected to adhere to the aircraft.
 - c. In addition, for hard wing airplanes with aft, fuselage mounted, turbine powered engines, the OTAC procedure must also include a tactile check of selected portions of the wing leading edges and the upper wing surfaces.

17.2 BACKGROUND

17.2.1 There are essential differences in the ground de-icing/anti-icing requirements that AOC holders will be required to meet.

- a. For an operator that wants the authorization to takeoff when ground icing of the aircraft is occurring, a complete de-icing/anti-icing programme that includes the training and testing of all personnel involved in the ground de-icing/anti-icing process will be required
- b. On the other hand, air taxis requires training and testing for pilots only. Additionally, if a air taxi operator chooses to use personnel other than pilots to assist in the ground de-icing/anti-icing and verification process, then those individuals must receive adequate and appropriate training.

17.2.2 Recognizing that most inspectors will be required to inspect a variety of aircraft and operators, his chapter will attempt to present the differences in a meaningful manner.

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17.3 DE-ICING REGULATIONS

- 17.3.1 The current regulations prohibit a takeoff when frost, ice, or snow (contamination) is adhering to the wings, control surfaces, or propellers of an airplane.
- 17.3.2 Traditionally, the pilot-in-command (PIC) has been held responsible for ensuring that critical surfaces of the aircraft are free of adhering frozen contaminants before takeoff.
- a. By the mid-1990's, an analysis of air carrier accidents led the ICAO to conclude that many PICs had not been provided with sufficient information to ensure that the aircraft is free of frost, ice, and snow.
 - b. ICAO Annex 6-I was amended to provide specific Standards for operating (that is, taking off) in weather when frost, ice, or snow could reasonably be expected to adhere to the aircraft (ground icing conditions).

17.4 AIRLINE GROUND DE-ICING/ANTI-ICING

17.4.1 GENERAL

- a. Regulations prohibits takeoff when contamination is adhering to critical surfaces of an airplane.
- b. A Ground De-icing programme may be approved for use by airlines during these conditions to operate “any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft” (ground icing conditions).
- c. There is also a provision for an aircraft operator to operate without a programme. Otherwise the operator may not “dispatch, release, or takeoff” of an aircraft in ground icing conditions.

17.4.2 PROVISIONS AND EXCEPTIONS

- a. An exception to the requirements for a complete de-icing/anti-icing programme provides that an air carrier is not required to have an approved de-icing/anti-icing programme if an outside the aircraft check (OTAC) is completed within 5 minutes prior to beginning the takeoff.
- b. An OTAC must be performed from outside the aircraft to ensure that “wings, control surfaces, and other critical surfaces are free of frost, ice, and snow” when the certificate holder is operating in ground icing conditions.
- c. If an AOC holder chooses to operate using this provision, the requirement for an OTAC must be approved in its operations specifications.

17.5 PERTINENT GROUND DE-ICING DEFINITIONS

17.5.1 PRE-TAKEOFF CHECK

- a. A pre-takeoff check is a check of the aircraft's wings or representative aircraft surfaces for frost, ice, or snow within the aircraft's holdover time. This check is required when

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- the AOC holder operates (that is, intends to takeoff) in ground icing conditions, the aircraft has been de-iced/anti iced, and a holdover time is established.
- b. This check is accomplished within the holdover time range, and is normally accomplished by the flight crew from inside the cockpit.
 - c. The pre-takeoff check requires the flight-crew to check the aircraft's wings or representative aircraft surfaces for contamination as well as to assess the current weather or other situational conditions.
 - d. The pre-takeoff check is integral to the use of holdover times; if holdover times are used, at least one pre-takeoff check must be performed.

17.5.2 PRE-TAKEOFF CONTAMINATION CHECK

- a. A pre-takeoff contamination check is a check that the flight crew and ground personnel conduct after the hold-over time has been exceeded to make sure that the wings, control surfaces, and other critical surfaces, as defined in the operator's programme, are free of frost, ice, and snow.
- b. The pre-takeoff contamination check must be completed within 5 minutes before beginning the takeoff. Operators must have aircraft-specific procedures for use by flight crewmembers and qualified ground personnel while conducting the check to ensure that the aircraft's wings, control surfaces, and other critical surfaces remain free of frost, ice, or snow when a holdover time has been exceeded.
- c. The pre-takeoff contamination check must be conducted from outside the aircraft for the following—
 - a. Hard wing airplanes with aft, fuselage mounted, turbine powered engines
 - b. All other airplanes unless the operator shows that the check can be adequately accomplished from inside the airplane.

17.5.3 OUTSIDE THE AIRCRAFT CHECK (OTAC)

- a. An OTAC is a check that must be accomplished from outside the aircraft. An OTAC is required for all operators who operate in ground icing conditions without an approved ground de-icing/anti-icing programme.
- b. For those operators without an approved programme, any time frost, ice, or snow may reasonably be expected to adhere to the aircraft, an OTAC must be performed to ensure that the wings, control surfaces, and other critical surfaces are free of contamination.

17.5.4 HOLDOVER TIME

- a. Holdover time is the estimated time de-icing/anti-icing fluid will prevent the formation of frost or ice, and the accumulation of snow on the treated surfaces of an aircraft.
- b. Holdover time begins when the final application of de-icing/anti-icing fluid commences and expires when the de-icing/anti-icing fluid applied to the aircraft loses its effectiveness.

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17.6 GROUND DE-ICING/ANTI-ICING PROGRAMME

17.6.1 ACCEPTABLE PROGRAMS

17.6.2 In order for the certificate holder to receive approval, an operator's ground de-icing/ anti-icing programme must cover the following four areas—

- a. Management plan detailing operational responsibilities and procedures
- b. Holdover timetables and procedures for their use
- c. Procedures and responsibilities for the following:
 - Aircraft ground de-icing/anti-icing
 - Pre-takeoff check
 - Pre-takeoff contamination check procedures
- d. Initial and recurrent ground training and/or testing for flight crewmembers and qualification for all other affected personnel, as applicable.

17.6.2 MANAGEMENT PLAN

17.6.2.1 The operator should develop, implement, and use a management plan to ensure proper execution of its approved de-icing/anti-icing programme.

17.6.1.2 The management plan should include operations and maintenance responsibilities and identify the management positions that are responsible for ensuring that all necessary elements of the de-icing/anti-icing programme are properly executed.

17.7 HOLDOVER TIMETABLES & PROCEDURES

17.7.1 HOLDOVER TIMETABLES

- a. Each operator is required to develop, and have available, holdover timetables for use by its personnel. In addition, each operator must make its hold-over timetables available for use in the cockpit.
- b. These time-tables are required to be supported by data acceptable to the CAASL-FS. Currently, the only acceptable data that contain the tables that are considered acceptable for use by the operators to develop their timetables are from the—
 - a. Society of Automotive Engineers (SAE) and International Standards Organization (ISO).
 - b. ARP 4737, “Aircraft De-icing/Anti-Icing Methods with Fluids, for Large Transport Aircraft,” and
 - c. ISO 11076, “Aerospace - Aircraft De-icing/Anti-icing Methods with Fluids,”

17.7.2 TAKEOFF WITHIN A HOLDOVER TIME

- a. If takeoff is conducted within the holdover time, at least one pre-takeoff check of the wings or representative surfaces should be completed by the flight crew within the holdover time range prior to the takeoff.
- b. Operators’ manuals should contain detailed procedures regarding the use of the timetables in their operations.

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17.7.3 TAKEOFF AFTER THE HOLDOVER TIME IS EXCEEDED

- a. Takeoff after the holdover time is exceeded is permitted only if one or more of the following actions has been taken—
- a. A pre-takeoff contamination check is made to ensure that wings, control surfaces, and other critical surfaces, as defined in the certificate holder's programme, are free of frost, ice, or snow
- b. It is otherwise determined by an alternative procedure, which was developed by the operator and approved by the CAASL-FS (for example, wing icing sensors) that the wings, control surfaces, and other critical surfaces as defined in the certificate holder's programme, are free of frost, ice, or snow
- c. The wings, control surfaces, and other critical surfaces have been re-de-iced and a new holdover time has been established

17.8 AIR TAXI SPECIAL CONSIDERATIONS

17.8.1 AOC HOLDER DOES NOT OPERATE IN GROUND ICING CONDITIONS

- a. The ground de-icing requirements are not applicable to an operator who does not operate in ground icing conditions.
- b. The AOC holder who does not operate in ground icing conditions is not required to train its pilots or develop pre-takeoff contamination procedures.

17.8.2 OPERATORS WHO USE ONLY ONE PILOT IN THEIR OPERATIONS

- a. Operators who use only one pilot in their operations (single pilot operator) are not required to comply with training requirements for ground de-icing.
- b. However, single pilot operators must comply with all the operational requirements for ground de-icing.
- c. Those operational requirements include—
 - a. A pre-takeoff contamination check; or
 - b. An approved alternative procedure to the pre-takeoff contamination check approved by the CAASL-FS.
- d. The pilots of these types of operators will need to demonstrate knowledge to operate in ground icing conditions during the initial and recurrent flight checks.

17.9 GROUND DE-ICING TRAINING REQUIREMENTS

17.9.1 If an operator is required to have an approved training programme for ground de-icing, that training programme must include pilot ground training relating to de-icing and anti-icing operations in all for initial and recurrent training and checking.

17.9.2 These training requirements must include procedures for operating airplanes during ground icing conditions. The operator must provide that training to its pilots and all other participating personnel.



17.9.3 The training must include at least the following elements—

- a. Use of Holdover Times;
- b. Airplane De-icing/Anti-Icing Procedures;
- c. Communications;
- d. Contamination;
- e. De-icing/Anti-icing Fluids;
- f. Cold Weather Pre-flight Inspection Procedures;
- g. Contamination Recognition.

17.9.4 All training should be aircraft-specific. When an operator has different kinds of aircraft, any unique characteristics of these aircraft while operating in ground icing conditions should be covered.

17.9.5 Other than single pilot operators, who must have the pre-takeoff contamination check procedures described in their Ops Specs, the AOC holders must have documentation in their It is important that flight crews do not use de-icing/anti-icing fluids unless they have been trained in the characteristics and effects of these fluids on their operation manuals or flight manuals for the procedures they intend to use to comply with their respective de-icing/anti-icing rule.

- a. These procedures may include descriptions of how and by whom the pre-takeoff contamination check will be accomplished, and how the operator will comply with its approved de-icing/anti-icing procedures.
- b. If an operator elects to not fly when frost, ice, or snow may reasonably be expected to adhere to the surface of an aircraft, that operator's manuals should contain specific guidance to that effect.
- c. This guidance should leave no doubt in the minds of the flight crewmembers that this operator does not have de-icing/anti-icing procedures in effect and does not authorize takeoff during ground icing conditions.

17.10 APPROVAL PROCESS

17.10.1 PHASE ONE - PRE-APPLICATION

17.10.1.1 Phase one begins when the operator initially approaches the CAASL-FS to obtain approval of a ground de-icing/anti-icing programme.

17.10.1.2 At this stage, both the Authority and the o Principal inspectors should ensure that the operator is aware of these sources of information.

17.10.1.3 The principal inspectors should outline for the operator those elements that must be contained in the operator's proposed programme and the actions that will be required at each stage of the approval process.



17.10.2 **PHASE TWO - INITIAL APPLICATION REVIEW**

17.10.2.1 Phase two begins when the operator initially submits a proposed programme package.

17.10.2.2 The principal inspectors' first action is to review the operator's submission to determine if each element specified in phase one is included.

- a. If the operator's initial programme is incomplete, the principal inspectors must immediately inform the operator and determine what action the operator proposes to take to complete the package.
- b. If the operator's package is complete or the principal inspectors judge that it will soon be complete, the principal inspectors should distribute the elements to the appropriate inspectors for a prompt initial examination.

17.10.2.3 **Initial Examination**

- a. The initial examination does not include a detailed operational or technical evaluation (this analysis is conducted in phase three).
- b. The phase two examination is conducted in sufficient detail to assess the completeness of the operator's package.
- c. Inspectors assigned to complete the initial review should promptly complete the initial evaluation and inform the principal inspectors of their findings.

17.10.2.4 **Unacceptable Elements**

- a. At this point it is appropriate for the principal inspectors to hold a meeting with the operator to discuss any obviously unacceptable elements of the programme. Principal inspectors should return obviously unacceptable packages to the operator with a letter outlining the deficiencies.
- b. Under unusual circumstances, the principal inspectors may need to return the operator's entire package with a written statement that explains why the submission is unacceptable.

17.10.2.5 **Initially Acceptable Package**

- a. When the operator's package is initially acceptable, the principal inspectors should—
 - Inform the operator; and
 - Provide an estimate of when the operator can expect to be informed of the results of the phase three analysis.

17.10.3 **PHASE THREE - DOCUMENT CONFORMANCE**

17.10.3.1 Phase three consists of a detailed analysis of the operator's ground de-icing/anti-icing programme, training, equipment, and facilities.

17.10.3.2 Throughout phase three, inspectors and operators should expect to encounter various deficiencies. Inspectors and operators should plan to meet and work closely to agree on corrections for these deficiencies throughout phase three.

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17.10.3.3 **Document Review**

- a. The first step in phase three is a detailed review and analysis of those manual sections the operator has prepared for the ground de-icing/anti-icing programme.
- b. The manual should provide all categories of employees with sufficient instructions and information to allow them to perform their duties with a high degree of safety.
- c. The operator's Ops Manual, Part A, including those sections concerning the ground de-icing/anti icing programme, does not require CAASL-FS approval.
 - However, the appropriate principal inspector must review and find acceptable the appropriate sections of the manual before the CAASL-FS grants initial approval to the operator to conduct a ground de-icing/anti-icing programme.
 - The operator is granted approval by means of Ops Specs.
 - After the operator receives initial approval of the programme or procedures, the applicable principal inspectors may require the operator to further revise manual contents.
- d. Inspectors should ensure that the content of the operator's manual meets the following criteria—
 - Identifies clearly each category of employee with responsibility for programme elements
 - Defines the duties of each category of employee involved
 - Provides adequate background information, step-by-step procedures and,
 - When appropriate, checklists that allow each category of employee to perform to the required standard.

17.10.3.4 **Pre-Takeoff Contamination Check**

- a. The experience gathered during de-icing/ anti-icing surveillance has shown that when hold-over times have been exceeded, the most critical area of an operator's ground de-icing/anti-icing pro-gram is an adequate pre-takeoff contamination check.
 - It is essential for the FOI to ensure that the operator's procedures offer the means for personnel to adequately determine that the aircraft is free of contamination before a takeoff during conditions when frost, ice, or snow may reasonably be expected to adhere to the aircraft.
 - This becomes more critical if the FOI authorizes the pre-takeoff contamination check to be conducted from inside the airplane.

17.10.3.5 **Training Programme Review**

- a. The operator must prepare a training/testing programme to qualify each required category of employee who has responsibilities for ground de-icing/anti-icing to perform their assigned duties.
- b. The training must include both general procedures and the specific requirements of each make, model, series, and variant of aircraft.
- c. The training programme must include a means of testing and qualification for each category of employee who is covered under the approved programme and who checks, inspects, de-ices, anti-ices, releases, dispatches, or operates an aircraft.
- d. The operator's training programme must include flight crew and dispatcher training.

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17.10.3.6 Facilities and Equipment

- a. The operator must acquire and deploy the equipment to accomplish ground de-icing/ anti-icing.
- b. Inspectors should plan to inspect some or all of the facilities at which this equipment is deployed (depending on the size of the operator) before granting initial approval.
- c. Some operators fulfil part of this requirement by demonstrating the knowledge of procedures and equipment during non-icing conditions prior to the de-icing/ anti-icing season.
- d. Inspectors must also evaluate coordination procedures between the airport operator and the air traffic control (ATC) facility at the airport.

17.10.3.7 Ops Specs for Operators with Ground De-Ant-icing

- a. When the FOI and AWE Inspector are satisfied that the operator is able to begin ground de-icing/anti-icing operations, they should issue applicable Operations Specifications.
- b. The Ops Specs should reference the sections of the operator's manual that contain the operations and airworthiness portions of the operator's programme.

17.10.4 PHASE FOUR - INSPECTION & DEMONSTRATION

17.10.4.1 Phase four consists of a validation of the operator's procedures in actual operations. This process consists of a progressive refinement of the operator's manuals, checklists, and procedures as experience is gained and inspector surveillance reports become available.

17.10.4.2 Inspections of the actual ground de-icing/anti-icing of the aircraft are necessary to evaluate the effectiveness of these programmes as well as to provide input on the adequacy of the rule requirements. Obviously this particular inspection must be done in the actual environment.

This may require inspector travel to locations where the ground de-icing occurs.

17.10.4.3 Opportunities to Monitor De-icing-in-Progress

- a. The only time that it may be possible to determine that the operator's ground de-icing/anti-icing procedures are safe and effective is during actual icing conditions. Therefore, inspection of operator ground de-icing/anti-icing procedures should be conducted during the times that winter operations and certificate holders' ground de-icing/anti-icing procedures are in effect.
- b. Through effective sampling, the Authority should be able to determine the operator's ability to comply with the ground de-icing regulations and meet the requirements of their Ops Specs.
 - The required number of ground de-icing surveillance activities necessary to determine a particular operator's effectiveness may vary from a relatively low percentage to a very high percentage.
 - For certain operators, 100 percent surveillance may be necessary in order to determine the operator's capability to safely operate during ground icing conditions.



17.10.4.4 **Types of Inspections**

- a. Inspections can be conducted in conjunction with ramp or en route inspections, or during airport site visits. Each principal inspector should develop and coordinate a ground de-icing/anti-icing surveillance plan.
- b. Surveillance of operators' recurrent ground de-icing/anti-icing testing or training programmes should also be conducted.
- c. The FOI should coordinate an inspection of the ground de-icing/anti-icing equipment used by the operator, with other inspectors travelling to airport where the equipment is located.
 - In some cases, one operator or contractor may deice more than one air carrier.
 - In this case, it is necessary for the FOI to ensure that the operator/contractor doing the de-icing has a complete knowledge of the specific operator's approved ground de-icing/anti-icing programme.
- d. The FOI can conduct this type of surveillance prior to the de-icing/anti-icing season and should confirm that the company performing the de-icing has the knowledge and the ability regarding ground de-icing/anti-icing equipment.

17.10.4.5 **Conclusion of Phase Four**

- a. Phase four may be concluded when, in the judgment of the FOI and AWEI, surveillance of the operator's programme shows that the operator is successfully conducting the programme under actual ground icing conditions.
- b. There is no minimum time period for phase four, but the principal inspectors must have an adequate number of surveillance reports to form an educated opinion of the operator's performance.
- e. Normally, operators should be able to progress through phase four in one winter season or less.

17.10.4.6 **Deficiencies**

- a. If final approval cannot be granted after an entire winter season due to deficiencies in the operator's programme, The FOI and AWEI should consider having the operator return to phase two.
- b. Principal inspectors shall revise the Ops Specs of operators who are returned to phase two.

17.10.5 **PHASE FIVE - FINAL CERTIFICATION ACTION**

- 17.10.5.1 When the principal inspectors are satisfied with the operator's performance, they should inform the operator in writing that the verification process is complete.



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Chapter 18 - DE-ICING INSPECTION

18.1 GENERAL

- 18.1.1 This inspection should be conducted periodically at every location where the operator uses the facilities and services in connection with the operations.
- a. Its purpose is to assess the acceptability as it pertains to the operation under consideration of various navigation- communications-meteorological facilities and equipment, related operational control procedures and ground services and to evaluate the competency of the assigned staff to operate them.
- 18.1.2 The aviation regulations require that no pilot may take off an airplane when frost, ice, or snow is adhering to its wings, control surfaces, engines, or propellers.
- 18.1.3 The primary objective of ground de-icing/anti-icing inspections is to determine if the operator has practices and procedures in place that will meet the requirements of the applicable regulations on ground de-icing/anti-icing.
- 18.1.4 To fully determine that the operator has such procedures in place and is effectively using these procedures, the aviation safety inspector will inspect specific areas of the ground de-icing/anti icing procedures.
- a. The areas required to be inspected will depend on the applicable regulations and operations specifications (Ops Specs).

18.2 GROUND DEICING/ANTI-ICING INSPECTION AREAS

- 18.2.1 The FOI should observe the following general inspection areas to determine an operator's compliance with the ground de-icing/anti icing rules—
- a. Flight crew
b. Maintenance and ground personnel
c. Training programme
d. Airport de-icing/anti-icing plan and secondary de-icing/anti-icing areas
e. Equipment
f. Fluids

18.2.2 FLIGHT CREW

- a. Inspectors should ensure that the flight-crew is familiar with the operator's de-icing/anti-icing procedures, has been trained and/or tested on the operator's procedures, and is familiar with the airport ground de-icing/ anti-icing plan and any remote de-icing/anti-icing capabilities.
- a. Procedural areas include the following—
- Holdover time (when appropriate):

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- Specific weather conditions
- Temperature
- Type of fluid used
- b. Procedures for communication:
 - De-icing/anti-icing start time
 - Documentation
 - ATC coordination
 - Current weather information
 - Verification of de-icing/anti-icing
- c. Procedures for pre-takeoff check, pre-takeoff contamination check, or outside the aircraft check (OTAC).
- d. Computation of latest takeoff time.

18.2.3 MAINTENANCE AND GROUND PERSONNEL

- a. Inspectors should ensure that the maintenance and ground personnel are familiar with the operator's de-icing/anti-icing programme and have been trained and/or tested in the operator's procedures.
- b. Procedural areas include the following
 - a. Knowledge of aircraft manufacturer's ground de-icing/anti-icing procedures:
 - Knowledge of de-icing/anti-icing methods and equipment
 - Knowledge of pre-takeoff check, pre-takeoff contamination check, or OTAC
 - b. Holdover time (when appropriate):
 - Specific weather conditions
 - Temperature
 - Type of fluid used
 - c. Cockpit Communications:
 - Type of fluid being used
 - De-icing/anti-icing start time
 - Confirmation that de-icing/anti-icing is complete and the airplane is clean

18.2.4 OPERATOR'S GROUND DEICING/ANTI-ICING TRAINING PROGRAMME

- a. Inspectors should ensure that the operator has approved training procedures in place that have met the training and/or testing requirements of the applicable regulations.
- b. These procedures should ensure that all personnel involved in airplane ground de-icing/anti-icing are knowledgeable of their duties and responsibilities.
- c. **Records**
 - a. Inspectors must ensure that the operator has a record keeping system in place to verify that all personnel have been properly trained in the operator's procedures. Records should include the following—

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- Types of training (including initial and recurrent)
- Dates of training received
- Training for pre-takeoff check, pre-takeoff contamination check, and/or OTAC.

18.2.5 AIRPORT DEICING/ANTI-ICING PLAN AND SECONDARY DEICING/ANTI-ICING AREAS

- a. If an airport de-icing/anti-icing plan has been developed, then the inspectors should have a general knowledge of this plan and any secondary de-icing/ anti-icing areas.
- b. De-icing/Anti-Icing Control Centre. Many airports have developed command centres that control the movement of aircraft, the allocation of slot times, the location of remote de-icing/anti-icing, and runway snow removal. The inspector should become familiar with the planned procedures prior to the de-icing/anti icing season.

18.2.6 EQUIPMENT

- a. Inspectors should have a general level of knowledge of the de-icing/anti-icing equipment.

18.2.7 FLUIDS

18.2.7.1 Inspectors should be familiar with the types of fluids used for de-icing/anti-icing

- a. Type I Applications:
 - Performance characteristics
 - Mix ratio
 - Temperature
- b. Types II and IV Applications:
 - Performance characteristics
 - Mix ratio
 - Temperature
 - Airplane rotation speed
 - Storage Requirements.

18.3 SPECIFIC GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES

18.3.1 OPERATOR PROCEDURES

18.3.1.1 Surveillance of the operator's procedures should clearly show the regulation that is being used to meet the ground de-icing/anti-icing rule.

18.3.1.2 An operator may have several options depending on the type of ground de-icing programme approved.

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18.3.2 CREW MEMBER TRAINING

18.3.2.1 Crew member training must be in accordance with the approved training programmes.

18.3.2.2 Minimum subject areas. Crew- member Training should include at least the following information:

- a. The use of holdover times and tables when using de-icing/anti-icing fluids (These hold-over times are only advisory for air taxi operations and will only guide the pilot as to what contamination to expect when conducting the pre-takeoff contamination check.)
- b. Airplane de-icing/anti-icing procedures; inspection and check procedures, to include responsibilities and requirements for the pre-takeoff contamination check, the OTAC, or the alternative procedures as applicable
- c. Communications with all personnel or agencies involved in the de-icing/anti-icing process and the decision making process
- d. Airplane surface contamination, to include adherence of frost, ice, or snow and critical area location and identification; knowledge of how small amounts of surface contamination adversely affects airplane performance and flight characteristics
- e. Types and characteristics of de-icing/anti-icing fluids, if fluids are used by the AOC holder
- f. Cold weather pre-flight inspection procedures
- g. Techniques for recognizing contamination on the airplane (This aspect of training should cover both pre-flight inspection and pre-takeoff contamination check.)



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Chapter 19 - OPERATIONS MANUAL

19.1 GENERAL

- 19.1.1 This section contains information, direction, and guidance to be used by principal operations inspectors (FOI) in the evaluation of an operator's general Operations Manual, Part A. The operator's Ops Manual, Part A is a segment of the operator's general manual system. The Operations Manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be issued to all personnel that are required to use this manual.
- 19.1.2 Regulations require each operator prepare and keep current an Operations Manual containing guidance for flight, ground, and management personnel during the conduct of the operator's operations.
- 19.1.3 Operators generally choose to have more than one “ops” manual specifically oriented to the user. The operations manual is intended to contain the general policy and procedures for the wide spectrum of operations employees.

19.2 CONTENT OF OPERATIONS MANUAL - PART A

- 19.2.1 SLCAP 4500 specifies topics that must be addressed in an operator's Ops Manual, Part A. The operator's Ops Manual, Part A must contain the duties and responsibilities for each category of employee.
- 19.2.2 This manual must also provide sufficient policy, direction, and guidance to its employees for the safe and efficient performance of their duties.
- 19.2.3 In addition, an operator's Ops Manual, Part A must address the policies, systems, and procedures necessary to comply with the operations specifications (Ops Specs) provisions and safe operating practices.
- 19.2.4 This ops evaluation contains discussions of selected topics that FOIs should look for when evaluating an operator's Ops Manual, Part A, and which may be required by the operator's initial and final conformance checklists.

19.3 OPERATOR MANAGEMENT STRUCTURE

- 19.3.1 When evaluating an operator's Ops Manual, Part A, OIs must ensure that the operator's management structure is included in the Ops Manual, Part A, and that it meets the following guidelines:

19.3.2 MANAGEMENT STRUCTURE

- 19.3.2.1 The Ops Manual, Part A must contain a description of the operator's management structure as it pertains to flight operation activities.
- 19.3.2.2 Organizational entities, areas of responsibility, and titles of key management positions must all be identified in the management structure.

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19.3.2.3 This description should contain information on how the flight operation management structure interfaces with the airworthiness management structure and the responsibilities of both.

19.3.2.4 Organizational charts and diagrams may also be useful in showing the relationship between operational units within the company.

19.3.3 NAMES OF MANAGEMENT PERSONNEL

19.3.3.1 The names of the individuals filling required management positions must be listed in the Ops Manual, Part A. An acceptable way for the operator to meet this requirement is to include a copy of its Ops Specs in the manual.

19.3.3.2 The CAASL-FS may approve management structures and titles different from those specified in SLCAP 4100, by granting a deviation to the ANR requirements.

19.3.3.3 When such a deviation is granted, it must be listed in the Ops Specs along with the names and titles of the approved management positions listed in the Ops Specs.

19.4 AUTHORISED OPERATIONS

19.4.1 When evaluating an operator's Ops Manual, Part A, FOIs must ensure that the operator's authorised operations are included in the operator's Ops Manual, Part A, and that they meet the following guidelines—

19.4.2 CLEAR DESCRIPTIONS OF AUTHORISED OPERATIONS

19.4.2.1 The Ops Manual, Part A must contain clear descriptions of the types and kinds of operations that the operator is authorised to conduct.

19.4.2.2 The Ops Manual, Part A must prohibit those operations which a flight crew could possibly conduct but which the operator is specifically prohibited from conducting by the Ops Specs.

19.4.2.3 The Ops Manual, Part A must contain information on the authorised areas of en-route operation in which flights may be conducted, including the types of aircraft authorised, crewmember complements, and any special en-route and instrument approach procedure authorizations or requirements. One way an operator may describe the types and kinds of authorised and prohibited operations is to include a copy of the operator's Ops Specs in the Ops Manual, Part A. Since the Ops Specs is designed to address a variety of situations and is not easily understandable as it applies to specific operational circumstances, FOIs should encourage operators to extract the applicable information and incorporate it in the Ops Manual, Part A.

19.4.2.4 Clearly written direction and guidance on how to comply with authorizations and limitations should also be included.

19.4.2.5 It is acceptable for operators to contract a charting and publishing service (such as Jeppesen/ Sanderson) to prepare manual material concerning these authorizations and

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imitations. In these cases, the charting and publishing service's product is considered to be a part of the operator's Ops Manual, Part A. FOIs must review this portion of the operator's Ops Manual, Part A as well as all other portions.

19.4.3 FLIGHT OPERATIONS POLICIES, METHODS, AND PROCEDURES

19.4.3.1 Flight operations policies, methods, and procedures may be located in either the Flight Ops Manual, Part A, in a section of the Ops Manual, Part A such as a flight operations policy manual, or in a company flight manual (FCOM).

19.4.3.2 When an operator operates a variety of aircraft, it may be preferable for the flight operations policies, methods, and procedures that are common to all aircraft to be published in the Ops Manual, Part A instead of each FCOM.

19.4.3.3 Crewmembers are required to comply with the flight operations policies, methods, and procedures, regardless of whether they are published in the Ops Manual, Part A or the FCOM. Therefore flight operations policies, methods, and procedures should be written in directive language, and provide specific operational criteria.

- a. An example operational criteria is as follows: "Use caution when arriving or departing a terminal area when thunderstorms are present."
- b. An example of a flight operations policy statement that is clearly directive and that provides specific operational criteria is as follows: "Take offs and landings shall not be attempted when thunderstorms are within 3 miles of the airport or the takeoff or arrival path."

19.5 OPERATIONAL CONTROL

19.5.1 When evaluating an operator's Ops Manual, Part A, FOIs must ensure that an operator's operational control procedures are included. The procedures, duties, and responsibilities of flight crew, operational control, and management personnel must also be described.

19.5.2 Furthermore, the Ops Manual, Part A must contain staffing requirements for operational control personnel during periods of time that flights are operational.

19.5.3 When training and operational control requirements for operational control personnel are not contained in a training and qualification document, they must be listed in the Ops Manual, Part A.

19.5.4 The FOI must ensure that the following requirements are met—

19.5.5 FLIGHT PROGRESS (WATCH) SYSTEMS– LARGE AIRCRAFT

19.5.5.1 The description of the operational control system used by AOC holders conducting schedule flights of more than two hours duration, ETOPS, or MNPS operations must be comprehensive.

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- a. The Ops Manual, Part A must contain flight dispatch procedures as well as flight watch procedures.
- b. The interrelation of flight dispatch, crew scheduling, and airworthiness control must be outlined in detail.
- c. The communication facilities to be used for operational control purposes, procedures to be used with ATC, and methods for handling delayed flights, must all be addressed.
- d. Procedures to be used during adverse weather conditions and for discontinuing flight in unsafe conditions must also be covered in the Ops Manual, Part A.
- e. The procedures to be used to operate unscheduled flights under supplemental regulations must be outlined if the operator conducts these kinds of flights.

19.5.6 FLIGHT FOLLOWING SYSTEMS

19.5.6.1 The description of the operational control system used by for AOC holders for scheduled or unscheduled flights of less than two hours duration must contain the flight release and flight watch procedures to be used by flight crew, operational control, and management personnel.

- a. The interrelation of flight crews, persons authorised to release flights, and airworthiness control personnel must be outlined.
- b. The communication facilities to be used and the procedures for using these facilities must also be covered in the Ops Manual, Part A.
- c. GOMs must contain procedures to be used during adverse weather conditions and for discontinuing flight in unsafe conditions.
- d. The Ops Specs are required to specify the flight following system and the location of the flight following centres. Paragraph A8 of the Ops Specs is allocated to authorize this type of operational control system.
- e. If the Ops Manual, Part A contains a comprehensive description of the system, only a reference to that Ops Manual, Part A section needs to be placed in paragraph A8 of the Ops Specs.

19.5.7 AIR TAXI OPERATIONS

19.5.7.1 The description of the operational control system used by air taxi operators must, as a minimum, contain a list of the names and titles of the personnel who are authorised by the operator to exercise operational control.

- a. If the operator does not establish a flight watch system, the Ops Manual, Part A must contain directions to flight crews for filing an ATC flight plan for each flight conducted.

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- b. If a flight watch system is established, the Ops Manual, Part A must contain an outline of the procedures which provide the operator with at least the information included in a VFR flight plan for each flight operated.
- c. The Ops Manual, Part A must also contain an outline of the procedures which provide the operator with information on the location, date, and estimated time for re-establishing radio or telephone contact if flights are conducted in areas where such communications cannot be maintained with the operator.
- d. The flight locating system must also be provided for timely notification to an CAASL facility or a search and rescue facility when an aircraft is overdue or missing.
- e. The Ops Manual, Part A shall also contain a description of the procedures for retaining flight location information until a flight has been completed.
- f. If an air taxi operator uses a flight control system more sophisticated than the basic requirements of the regulation, the Ops Manual, Part A shall contain a description of the system and procedures actually used.

19.6 FLIGHT PLANNING

- 19.6.1 When evaluating an operator's Ops Manual, Part A, FOIs shall ensure that an operator's flight planning procedures are included.
- 19.6.2 The direction and guidance for flight planning must be comprehensive and address the responsibilities of both flight control and flight crew personnel.
- 19.6.3 The Ops Manual, Part A must contain a discussion of weather minimums, special airports, and other special requirements such as drift down, re-release, and diversion contingencies.
- 19.6.4 Some operators may elect to place the flight planning procedures in the FCOM and the operational control procedures in a dispatch or flight control user manual.

19.6.5 NOTICES TO AIRMEN (NOTAM) AND PILOT REPORTS (PIREP).

- 19.6.5.1 When evaluating an operator's Ops Manual, Part A, FOIs shall ensure that procedures for the acquisition of NOTAMs and PIREPs and for the distribution of these NOTAMs and PIREPs to applicable personnel are included. The Ops Manual, Part A should also contain a description of the procedures for obtaining applicable NOTAMs that are only distributed to a local area.

19.6.6 RESTRICTED OR SUSPENDED OPERATIONS.

- 19.6.6.1 The regulations require operators who know of conditions that preclude safe operations (including hazardous airport and runway conditions), to restrict or suspend operations until those conditions change. FOIs must evaluate an operator's Ops Manual, Part A to ensure that it contains a description of the procedures for employees to follow should they become aware of such conditions.

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19.6.7 INTERNATIONAL OPERATIONS.

19.6.7.1 For an operator that conducts international operations, FOIs must evaluate the operator's Ops Manual, Part A to ensure that it includes pertinent and necessary flight control information. In the Ops Manual, Part A, particular emphasis should be placed on fuel and performance requirements, communications, weather reports and forecasts, flight planning, and any specialized means of navigation.

19.7 OBSERVER'S SEATS

19.7.1 FOIs should ensure that the operator's Ops Manual, Part A includes the requirement that the operator must provide an observer's seat (jump seat or passenger seat) to CAASL-FS inspectors and other specified personnel.

19.7.2 Usually operators assign the authority to control the use of these forward observer's seats to a light control department.

19.7.3 Gate agents and passenger handling personnel must also be aware of these requirements.

19.7.4 Crewmembers must also be aware of the procedures to be used for observer seat assignments.

19.7.5 Information to comply with the inspection and surveillance requirements must be included in the Ops Manual, Part A, such as the following—

- a. Priorities of CAASL-FS inspectors, crewmembers, manufacturer's technical representatives, and other personnel.
- b. Methods for ensuring that no more than one person is assigned to a forward observers position at any particular time
- c. Procedures for disseminating forward observer position assignments to other stations

19.8 LINE STATION OPERATIONS

19.8.1 Line station operations are those activities performed by the operator's personnel (or by other personnel for the operator) to originate, turn around, or terminate flights conducted by the operator. For an operator that conducts line station operations,

19.8.2 FOIs must evaluate the operator's Ops Manual, Part A to ensure that it includes the necessary information on the various topics that follow.

19.8.3 Line station operations should include the use of the following types of facilities and equipment—

- a. Ramp areas including markings, signs, signalling devices, lighting, and blast fences
- b. Ramp facilities and equipment, such as passenger and cargo deplaning and enplaning equipment (towing, refuelling, catering, and ground power equipment)



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- c. Crewmember meeting areas, facilities for crewmember flight planning (preparation for flight), and post flight activities
- d. Ground station personnel work areas and facilities, communications equipment, and administrative support

19.8.4 Inspectors must ensure that an operator's Ops Manual, Part A contains the policies, procedures, and guidance to be used by the personnel who support the operator's flight operations at line stations.

19.8.4.1 This manual material must include those situations in which the operator maintains line stations as well as situations in which the operator contracts or purchases line station support.

19.8.4.2 This type of material is usually located throughout various user manuals, such as ground station operations and maintenance manuals, passenger service manuals, facilities and equipment manuals, fuelling manuals, and other special types of manuals.

19.8.4.3 An operator may format and organize this type of manual material in a manner which is most consistent and usable for the operator's kind and type of operation.

19.8.4.4 Regardless of the format and organization, however, this type of manual information is considered to be Ops Manual, Part A material.

19.8.4.5 The following are examples of the types of information that should be addressed in manual material concerning line stations operations.

19.8.5 DUTIES AND RESPONSIBILITIES

- a. The Ops Manual, Part A or MCM, as appropriate, must contain an outline of the duties and responsibilities of line station supervisory personnel.
 - a. The types of positions that should be addressed include: ground station operations personnel, passenger handling agents, cargo and baggage handling personnel, and aircraft servicing personnel (when not addressed in the MCM).
 - b. When an operator contracts for, or purchases, line station support, the Ops Manual, Part A or MCM, as appropriate, must contain outlines of the procedures to be used by the personnel providing the support.

19.8.6 PASSENGER HANDLING AND PROTECTION

- b. The Ops Manual, Part A must contain procedures and guidance for ensuring the safety of passengers during line station operations. The following are examples of passenger handling and protection subjects that must be addressed in the Ops Manual, Part A—
 - a. Passenger enplaning and deplaning procedures
 - b. Procedures for use of jet ways, passenger boarding stairs, air stairs and other types of passenger boarding equipment
 - c. Procedures to ensure the safety of passengers on the ramp including restricting of ground equipment and vehicle operation on ramps; and directing passengers

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to and from aircraft, around equipment, and to painted pathway lines on the ramp

- d. Procedures and guidance for protecting passengers from jet intake and blast, rotating and static propellers and rotors, ice on the ramp and boarding equipment, and tripping hazards
- e. Procedures for prohibiting smoking in no smoking areas
- f. Procedures for assisting and ensuring safety of handicapped persons
- g. Procedures for handling intoxicated, hostile, or unruly persons
- h. Procedures for handling and controlling carry-on baggage
- i. Procedures for exit seating.
- j. Procedures for identifying and handling hazardous materials.

19.8.7 AIRCRAFT SERVICING AND RAMP OPERATIONS

19.8.7.1 The Ops Manual, Part A and MCM must contain detailed procedures and guidance on servicing and maintaining aircraft during line station operations.

19.8.7.2 These manuals should also contain instructions on the maintenance and use of ramp areas.

19.8.7.3 The following are examples of procedures for aircraft servicing and ramp operations that should be addressed in the Ops Manual, Part A—

- a. Procedures for the safety and protection of personnel working on the ramp
- b. Procedures and/or guidance for the maintenance and catering of aircraft, with or without passengers on board
- c. Procedures for fuelling aircraft with or without passengers on board, including any requirements for crewmembers to be on board during fuelling or prohibitions against positioning fuel trucks next to open exits with passengers on board
- d. Procedures for operating ground equipment including the capabilities and limitations of the equipment and the training and qualification of persons before using the equipment
- e. Procedures and guidance for properly locating and stowing ground equipment
- f. Procedures for the operation of aircraft cargo doors, baggage and cargo loading, closing and checking the security of doors
- g. Procedures for foreign object damage (FOD) control and periodically inspecting ramp areas
- h. Procedures to be used during adverse weather conditions such as thunderstorms, high winds, low visibility
- i. Procedures for the inspection and removal of frost, ice, snow, or standing water

19.8.8 HOT AND COLD WEATHER OPERATIONS

19.8.8.1 FOIs should evaluate an operator's Ops Manual, Part A to ensure that it (as well as the MCM) contains detailed procedures and guidance on hot and cold weather operations, including—

- a. Procedures for the inspection of ramps for accumulation of frost, ice, snow, or standing water
- b. Precautions for the operation of vehicles and equipment
- c. Restrictions and cautions on aircraft movements
- d. Restrictions and cautions for the protection of passengers and ramp personnel

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19.8.9 DEICING PROCEDURES

- 19.8.9.1 Aircraft ground de-icing procedures should be clearly delineated by the operator.
- 19.8.9.2 While such procedures are usually in the MCM, the operator's Ops Manual, Part A must contain the following types of information concerning de-icing for crewmembers, ground operations, and management personnel—
- Assignment of responsibility for ensuring that aircraft is clear of frost, ice, and snow accumulation
 - Conditions that require aircraft ground de-icing
 - Procedures to ensure the effectiveness of de-icing, including the frequency of applications, proper fluid mixtures, and tactile or close visual checks of selected portions of critical surfaces
 - Parts of the aircraft to deice, including a description of the critical surfaces of the aircraft used by the Operator
 - Locations on the ramps or airports where de-icing will be conducted
 - Engine auxiliary power unit (APU) and ground equipment operation during de-icing
 - Passenger and ramp personnel protection during de-icing Procedures to be used by contract personnel when the operator contracts for de-icing services
 - If applicable, a complete description of the elements of the operator's ground de-icing/anti-icing programme and the procedures required to operate under that programme
 - If applicable, a complete description of the ground de-icing/anti-icing operational procedures that the operator uses to comply with regulatory requirements.

19.8.10 AIRCRAFT MOVEMENT IN THE RAMP AREA

- 19.8.10.1 FOIs must ensure that the operator's procedures and guidance for the movement of aircraft in the ramp area is carefully coordinated between the operator's Ops Manual, Part A and MCM (or appropriate user manuals).
- 19.8.10.2 The definitions of signalling devices, signs, and ramp markings (such as taxi lines, stop lines, boundary and clearance lines) must be the same and be mutually understood by both crewmembers and ground handling personnel.
- 19.8.10.3 Specific procedures for engine start, pre-taxi pushback, power back (if approved), taxi out, taxi in, and parking while in the ramp area must be provided in the Ops Manual, Part A (or in an applicable user manual).
- 19.8.10.4 Communication procedures for ground handling personnel and crewmembers must be thoroughly coordinated.
- 19.8.10.5 FOIs must ensure that the interphone terminology and hand signals used by ground handling personnel and crewmembers have the same meaning. The need for common terminology and hand signals is also important for crewmembers and passenger handling agents. Illustrations of standard hand signals and their meanings should be provided in the Ops Manual, Part A and MCM (or appropriate user manuals).



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19.8.10.6 The training and qualification requirements of personnel authorised to move aircraft on the ramp or on the airport must be described in the appropriate manuals. For example, when an operator is approved to power back, the Ops Manual, Part A must contain specific procedures for those operations for each airport and gate where authorised. Power back communications and hand signals must be thoroughly coordinated between crewmembers and ground handling personnel.

19.8.11 LINE STATION EMERGENCY PROCEDURES

19.8.11.1 FOIs must ensure that the operator's Ops Manual, Part A and MCM contain procedures to be used by crewmembers or ground personnel in case of emergency situations during line station operations.

- a. Line station emergency procedures must contain the specific duties and actions of appropriate personnel. This type of manual material must also include notification procedures and requirements.
- b. The notification procedures and requirements should contain specifications as to who will be notified, who will make the notification, how the notification should be made, and when it will be made for the various types of emergency situations that could occur at line stations.
- c. Usually this type of manual material should also include a quick reference telephone listing for obtaining firefighting and medical assistance, and for notifying appropriate company management, law enforcement officials, and other government investigation officials.
- d. Line station emergency procedures should be published in a distinct section of the Ops Manual, Part A or MCM so that they are easily accessible.
- e. For large, complex operators, line station emergency procedures are usually published as a manual under separate cover to assure rapid accessibility.

19.8.11.2 Operators may publish a line station emergency procedures manual for each station because of the uniqueness of each line station. FOIs should encourage this as a preferred practice. The types of situations that should be covered in line station emergency procedures include the following—

19.8.11.3 Aircraft accidents and incidents (FOIs should encourage operators to develop guidance for ground personnel providing passenger lists to aid in handling passengers and accounting for all passengers immediately after a survivable type accident. Handling passengers includes actions such as providing suitable transportation for injured passengers to locations where medical assistance can be obtained.)

- a. Bomb threats, hijack procedures, and other types of security incidents
- b. Fuel spills and hazardous materials mishaps
- c. Procedures for post-flight handling of passenger injury, illness, or incidents involving passenger altercations and interference with crewmembers
- d. Employee/passenger accidents and injuries

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- e. Adverse weather conditions such as tornadoes and hurricanes or other adverse conditions such as earthquakes (if such conditions are likely to occur at the operator's line stations)
- f. Emergency evacuation of aircraft while parked (This should include procedures for both the flight crew and cabin crews (CCM's) to activate the aircraft emergency lighting systems during an emergency evacuation, regardless of the perceived ease with which an evacuation can be accomplished; and passenger egress procedures for crewmembers and other operations personnel. These procedures should include the requirement that whenever passengers are on board the aircraft prior to airplane movement on the surface, that at least one floor-level exit must be usable for the egress of passengers through normal or emergency means.)
- g. Aircraft rescue and firefighting (ARFF) emergency notification procedures while parked (FOI's shall encourage their assigned operators to develop explicit ARFF emergency notification procedures for crewmembers and other operations personnel to employ in the event of an emergency occurrence on their aircraft while they are parked.)
- h. For passenger-carrying operations, if the operator's ARFF procedures require its crewmembers to implement these procedures, then the following guidance should be included:
 - i. In the event of an aircraft fire or other emergency scenario involving aircraft evacuation, the first actions of crewmembers and/or other personnel qualified in accordance with necessary regulations should be to initiate the evacuation of the aircraft occupants. Once the crew has determined that all aircraft occupants have been evacuated, then the crewmember(s) designated by the operator should initiate the ARFF emergency notification procedures.

19.8.12 CONTRACT SERVICES

19.8.12.1 FOIs must ensure that the Ops Manual, Part A and MCM, as appropriate, contain policy and guidance concerning the interrelationship between the operator's personnel and the personnel of organizations who provide contract services at line stations.

19.8.12.1 Contractor personnel are required to be trained on operator specific procedures.

19.8.12.2 The appropriate manual must contain the specifications for: the types of training to be given to contractor personnel; who is responsible for providing the training; and who is responsible for keeping records of the training.

19.8.12.3 Although the contractor may be delegated this responsibility, the operator has final responsibility.

19.8.13 FLIGHT PREPARATION (TRIP) RECORDS

19.8.13.1 FOIs must ensure that the operator's Ops Manual, Part A contains policies, procedures, and guidance concerning the preparation and disposition of trip records at line stations.

19.8.13.2 Trip records include documents such as dispatch and flight releases, flight plans, weather NOTAMs, oceanic plotting charts, load manifests, and weight and balance documents.

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19.8.13.3 The manual material must specify who is responsible for preparing the trip records, the coordination activities that must be accomplished during the trip record preparation process, and the intermediate and final disposition of the trip records.

19.8.13.4 The FOI must ensure that the policies, procedures, and guidance in this manual material consistently contain accurate information for crewmembers and flight operational control personnel.

19.8.14 LOCAL CONDITIONS AT LINE STATIONS

19.8.14.1 Personnel at line stations have immediate access to and knowledge of various conditions and activities that could affect flight operations at those line stations.

19.8.14.2 Examples of local conditions and activities include the following: weather conditions, runway and taxiway conditions, airport construction activities, and new obstacles observed in the airport takeoff flight paths.

19.8.14.3 As such, inspectors must ensure that an operator's Ops Manual, Part A contains instructions and procedures so that line station personnel can provide the operator with local condition reports.

19.8.14.4 This manual material must contain clear instructions about the circumstances in which line station personnel are authorised to suspend or delay flight operations.

19.9 PASSENGER BRIEFING PROCEDURES.

19.9.1 FOIs must ensure that the operator's Ops Manual, Part A or flight manual, as appropriate, specifies the procedures to be used for pre-takeoff, en-route, and post-landing briefings of passengers.

19.9.2 Operators who use CCM's may publish CCM user manuals as sections in their Ops Manual, Part A's. The Ops Manual, Part A or CCM user manual must contain the briefings to be given.

19.9.3 Passenger briefing cards must be used to supplement the oral briefings. These passenger briefing cards must depict the required items that are addressed during the oral briefings.

19.9.4 The AOC Certification Manual contains technical source references regarding passenger safety information and briefing cards.

19.10 EXIT SEATING PROGRAMME

19.10.1 IS 015 regulates exit seating in aircraft operated by AOC holders. These regulations prescribe requirements relating to the seating of airline passengers near emergency exits.

19.10.2 FOIs must ensure that AOC holders' manuals, as appropriate, contain the applicable portions of the operators' approved exit seating programme.

19.10.3 USE OF PORTABLE ELECTRONIC DEVICES

19.10.3.1 FOI's and principal avionics inspectors (PAI) shall review the provisions contained in the ANR Parts and technical sources references with their assigned operators.

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- 19.10.3.2 FOI's and PAI's shall ensure that their operators have adequate procedures in place to determine whether or not portable electronic devices are acceptable for passenger use on board their aircraft.
- 19.10.3.3 FOI's shall ensure that their operators specify in their operations manuals those portable electronic devices that may not be operated on board their aircraft.
- 19.10.3.4 FOI's should encourage their assigned operators to include information regarding the operation of portable electronic devices in their operators' pre-takeoff passenger safety briefings. These briefings should include any specific restrictions that apply to passenger use of portable electronic devices.

19.11 WEIGHT AND BALANCE PROCEDURES

- 19.11.1 When evaluating an operator's Ops Manual, Part A, FOIs shall ensure that an operator's weight and balance procedures are included in the operator's Ops Manual, Part A, and that they meet the following guidelines—

19.11.2 PLACEMENT OF WEIGHT AND BALANCE PROCEDURES

- 19.11.2.1 Each type of airplane used by the operator may require a separate weight and balance procedure.
- 19.11.2.2 In such cases, it may be appropriate for the operator to place the weight and balance procedure to be used by flight crews in the FCOM and the procedures to be used by other flight operations personnel in sections of the Ops Manual, Part A.
- 19.11.2.3 If the operator develops a single weight and balance procedure for all aircraft operated, it may be appropriate for the operator to place the procedure to be used by flight crews and other flight operations personnel in the Ops Manual, Part A.
- 19.11.2.4 Operators may develop their own weight and balance procedures or use the procedures furnished by aircraft manufacturers.
- 19.11.2.5 FOIs should recommend the following advisory circulars to the operator:
- "Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair"
 - "Pilot's Weight and Balance Handbook"
 - "Aircraft Weight and Balance Control"
- 19.11.2.6 The approval of weight and balance procedures is granted in the Ops Specs.
- Reference to the Ops Specs may be made in the Ops Manual, Part A, however the reference may not be used instead of a detailed description of the procedures to be used by flight operations, ground handling, and flight crew personnel.
 - FOIs must ensure that the information and guidance in the operator's Ops Manual, Part A is consistent with that in the MCM.

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- c. The weight and balance procedures described in the operator's manuals should normally address the following topics:
- Procedures for complying with weight and balance limitations for each type of aircraft
 - For AOC holders procedures for ensure that the empty weight and centre of gravity of each aircraft is determined by actually weighing the aircraft within the preceding 36 months
 - Procedures for determining the weight of passengers, crew, cargo, and baggage
 - Procedures for making the centre of gravity calculations including loading schedules or other approved methods, if applicable
 - Procedures for the completion and disposition of load manifests and weight and balance records
 - Procedures for loading the aircraft

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APPENDIX 19 A

 CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Operations Manual Inspection Report									
Inspection Date:			Contact Details: Civil Aviation Authority of Sri Lanka 152/1, Minuwangoda Road, Katunayake Website: www.caa.lk						
Operator:									
Location:			Director Flight Safety Tp. 94 11 2358912 Fax. 94 11 2358879				Director General of Civil Aviation Tp. 94 11 2358800 Fax: 94 11 2304644		
Remarks legend (Rem): S – Satisfactory U – Unsatisfactory N/O – Not Observed N/A- Not Applicable									
A	General	Rem	B	Ops Manual Part A (Contd.)	Rem	B	Ops Manual Part A (Contd.)	Rem	
1	Organization & Readability		8	Safety precautions during Refueling with passengers on Board.		28	conduct of precision and non-precision instrument approach procedures		
1.1.	Clear								
1.2	Concise		9	Ground handling arrangements and procedures		29	Management of crew IMC workload during night and instrument approach operations.		
1.3	Information Easily		10	Pilot-in-command observing an accident.					
1.4	Located		11	the designation of the succession of command		30	Use of the ground proximity warning system (GPWS).		
1.5	Print Quality								
2	Validity and Accuracy		12	fuel and oil to be carried		31	airborne collision avoidance system (ACAS)		
3	Continuity		13	amount of oxygen		32	interception of civil aircraft including/Aircraft Tracking		
4	Currency and Conformity		14	mass and balance control		32.a	pilots-in-command of intercepted aircraft		
5	Distribution & Availability		15	control of ground de-icing/anti-icing operations		32.b	visual signals for use by intercepting		
6	Approvals		16	operational flight plan					
B	Ops Manual Part A		17	Standard operating procedures (SOPs)		33	aeroplanes intended to be operated above 15 000 m (49 000 ft):		
1	Instructions outlining the responsibilities		18	use of normal checklists and the timing of their use		33.a	event of exposure to solar cosmic radiation		
2	Information and Policy relating to Fatigue management		19	Departure contingency procedures		33.b	appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and		
2.a	rules pertaining to flight time, flight duty period		20	maintenance of altitude awareness and the use of automated or flight crew altitude call-out		33.c	communication with the ATS unit cannot be established or is interrupted		
2.b	operator's FRMS policy and documentation		21	use of autopilots and auto-throttles in IMC		34	safety management system (SMS)		
3	A list of Navigational Equipment		22	ATC clearances, particularly where terrain clearance is involved.					
4	long-range navigation procedures, engine Failure procedure for EDTO/ETOPS								



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5	circumstances in which a radio listening determining minimum flight altitudes		23	Departure and approach briefings		35	dangerous goods	
6	determining aerodrome operating minima		24	Areas, routes and aerodromes.		36	Security instructions and guidance	
7	circumstances in which a radio listening		25	Stabilized approach procedure		37	search procedure checklist	
8	Volcanic Ash reporting Procedure		26	Limitation on high rates of descent near the surface.		38	head-up displays (HUD) and enhanced vision systems (EVS) equipment	
C	Ops Manual Part B	Rem	27	Continue an instrument approach.		39	use of the EFB (Instructions & Training	
1	Certification limitations and operating limitations					6.a	take-off runway length and requirements for dry, wet contaminated conditions	
2	normal, abnormal and emergency procedures		11	Emergency evacuation procedures		6.b	take-off climb limitations	
3	climb performance with all engines operating		12	The normal, abnormal and emergency procedures		6.c	en-route climb limitations	
4	Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings		13	Survival and emergency equipment		6.d	approach climb limitations and landing climb limitations;	
5	maximum crosswind and tailwind components		14	ground-air visual signal code		6.e	landing runway length and requirements for dry, wet contaminated conditions	
6	mass and balance calculations					6.f	supplementary information, such as tire speed limitations	
7	aircraft loading and securing of load		D	Ops Manual Part C	Rem			
8	Aircraft systems, associated controls and instructions		1	route guide				
9	The minimum and list equipment list (MEL) configuration deviation (CDL)		2	minimum flight altitudes		E	Ops Manual Part D	Rem
10	Checklist of emergency and safety equipment		3	Aerodrome operating minima for each of the aerodromes		1	Details of the flight crew training programme	
			4	increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities		2	Details of the cabin crew duties training programme	
			5	determining aerodrome operating minima for instrument approaches using HUD and EVS		3	Details of the flight operations officer/flight dispatcher training programme	
			6	flight profiles required by regulations, including but not limited to, the determination				

Comments:

Inspectors Name:

Signature:



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Chapter 20 - CABIN CREWMEMBER SEP MANUAL

20.1 GENERAL GUIDANCE

- 20.1.1 An operator may develop and publish in its manual any policy, method, procedure, or checklist that the operator finds necessary for the type of operations conducted.
- 20.1.1 These policies, methods, procedures, and checklists, however, must comply with the ANRs and be consistent with safe operating practices.
- 20.1.2 FOIs should encourage operators to be innovative and progressive in developing such policies, methods, procedures, and checklists.
- 20.1.3 The FOI must ensure that the operator's material complies with relevant requirements, is consistent with safe operating practices, and is based on sound rationale or demonstrated effectiveness.

20.2 METHOD OF EVALUATION

- 20.2.1 FOIs should use the checklist for this evaluation to assist them in the acceptance of manuals required for cabin crew members (CCM) engaged in operations. SLCAP 4300 checklist should be used as follows—
 - 20.2.1.1 Make a copy.
 - 20.2.1.2 Make recommendations.
 - 20.2.1.3 Give the copy to the appropriate representative of the Operator, and ask that person to document the pertinent page number for each item.
 - 20.2.1.4 When satisfactory, initial each item.
 - 20.2.1.5 Make appropriate remarks.
 - 20.2.1.6 When the entire manual is satisfactory, initial the LEP pages.
- 20.2.2 FOIs should ensure that the information and procedures contained in the CCM SEP manual are consistent with the information and procedures throughout all of the operator's manuals.
 - 20.2.2.1 A review may be accomplished by comparing information and procedures (such as the operator's carry-on baggage programme, exit seating programme, and emergency procedures) in the CCM SEP manual with those contained in the operator's aircraft/operations and passenger service manuals.
 - 20.2.2.2 FOIs should use a List of Effective Pages or some other method to determine currency and completion of the CCM SEP manual. FOIs should coordinate with the operator's assigned principal security inspector to review the security and hazardous materials procedures that are described in the operator's manuals.

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Chapter 21 - AIRCRAFT FLIGHT MANUAL

21.1 GENERAL

- 21.1.1 Regulations require that AOC holders maintain a current flight manual for each aircraft used in their commercial air transport operations. The Flight Manual shall be updated by implementing changes made mandatory by the respective State of Registry.
- 21.1.2 Regulations require that a flight manual (or the equivalent information for aircraft certified without a flight manual) be available in the aircraft for flight crew personnel use and guidance during flight operations.
- 21.1.3 To satisfy the regulatory requirements, operators may use either the approved airplane flight manual (AFM) or the approved rotorcraft flight manual (RFM), as applicable, or they may develop, obtain approval for, and use a company flight manual (FCOM). AFMs or RFMs (as applicable) are acceptable for satisfying the ANR in cases of small, simple aircraft.
- 21.1.4 The CAASL-FS-preferred practice for all other aircraft, however, is for operators to develop a company flight manual (FCOM) which includes procedures specifically tailored to the operator's operations.
- 21.1.5 Operators who operate multiple aircraft types usually find it efficient to collect policies, procedures, and guidance common to all aircraft in a single manual such as a Standard Operating Procedures Manual (SOP).
- 21.1.6 In this case, the FCOM contains only those policies, procedures, and guidance that apply to the operation of the specific aircraft. FOIs shall use this section as guidance when evaluating an operator's AFMs, RFMs, or FCOMs.

21.2 APPROVED FLIGHT MANUALS (AFMS)

- 21.2.1 Regulations requires that operators have on-board the aircraft an approved airplane flight manual (AFM) or an approved rotorcraft flight manual (RFM) with each aircraft certified after
- 21.2.2 Prior to this date, approved flight manuals were only required for transport category airplanes.

21.3 APPROVED SECTIONS OF AFMS AND RFMS

- 21.3.1 AFMs of transport category airplanes contain three sections which are reviewed by the FMRB and approved by the ACO. These are the procedures, performance data, and limitation sections. Weight and balance limits for transport category airplanes are given in the limitations section.
- 21.3.2 AFMs of airplanes generally contain four approved sections: procedures, performance data, limitations, and weight and balance.

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21.3.2.1 PROCEDURES SECTION OF AFMS FOR COMPLEX AIRCRAFT

- a. The procedures section of an AFM of complex aircraft is typically not suitable for flight crew use in air transportation operations. The certification regulations only require that the procedures section of an AFM or RFM contain specific and detailed procedural information related to the unique characteristics of the aircraft.
- b. These manuals are not required to contain each and every procedure necessary to operate the aircraft.
- c. Most manufacturers of complex aircraft develop and have approved only those procedures necessary to certify the aircraft.
- d. The certification regulations do not require that procedural information be expressed in sequential, step by step format suitable for publication in a checklist.
- e. AFM procedural information may be supplied in narrative format.

21.3.2.2 PERFORMANCE DATA SECTION OF AFMS FOR COMPLEX AIRCRAFT

AFMs for complex aircraft contain extensive performance data sections. All performance information necessary to operate the aircraft in revenue operations is in this section. The AFM performance data section of a complex aircraft is typically not suitable for flight crew use. This section is suitable for use by performance engineers.

21.3.2.3 PROCEDURES & PERFORMANCE DATA SECTIONS FOR TRANSPORT AIRCRAFT

AFMs and RFMs of smaller, less complex aircraft and helicopters typically contain performance data and procedures sections that are suitable for flight crew use. FOIs of operators using these aircraft shall review the applicable manual to ensure that these sections are appropriate for flight crew use in the operation being conducted.

21.3.2.4 UNAPPROVED SECTIONS OF AFMS AND RFMS

In addition to the approved sections of AFMs and RFMs, aircraft manufacturers often include other information which does not require approval under the certification regulations in an AFM and RFM.

21.3.2.5 USE OF AFMS OR RFMS AS FLIGHT MANUALS

- a. When an operator proposes to use an AFM or RFM as the required flight manual, the FOI must review both the approved and unapproved sections of the manual.
- b. The FOI must determine that the information in the AFM is presented in a manner that is suitable for use by the flight crew, that it is compatible with the type of operation conducted by the operator, and that it contains all of the required information and procedures.

21.3.2.6 CERTIFICATION REGULATIONS VERSUS OPERATIONAL REQUIREMENTS

- a. Aircraft currently used in air transportation operations have been certified under the provisions of wide spectrum of regulations.

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- The assumptions, limitations, and requirements of these aircraft certification regulations may differ from the operational requirements of the ANRs.
- The direction and guidance concerning procedures and performance which operators must provide to flight crews for aircraft operations is normally more comprehensive than that published in an AFM or RFM. For example, basic crew coordination procedures such as standard altitude awareness callouts during departures and approaches are not usually in an AFM or RFM.

21.3.2.7 SUPPLEMENTARY INFORMATION

When a FOI finds that the procedures or performance information published in an AFM or RFM is insufficient for the operation to be conducted, the FOI shall require the operator to develop supplementary information and make it available to flight crewmembers.

21.3.2.8 AIRCRAFT CERTIFIED WITHOUT AN AFM OR RFM

- a. An AFM or RFM may not have been prepared for an airplane or rotorcraft certificated before March 1, 1979. But ANR require that the same information required to be in an AFM or RFM be available aboard these aircraft.
 - The only practical method for meeting this requirement for aircraft of 6,000 pounds maximum take-off weight (MTOW) or more is for the operator to prepare a FCOM which contains performance, procedures, and limitations.
 - Some smaller aircraft may be operated satisfactorily with the information presented by placards in the aircraft.

21.4 COMPANY FLIGHT MANUALS (FCOMS)

21.4.1 An FCOM containing the required information and approved by the FOI under the provisions of this handbook is an approved flight manual. An approved FCOM is the only flight manual that needs to be carried aboard an aircraft. FOIs must evaluate an operator's FCOMs using the guidance that follows.

21.4.2 IDENTIFICATION AS A FLIGHT MANUAL

21.4.2.1 FOIs must ensure that a FCOM is clearly marked as an approved flight manual for a specific operator. Sections of a FCOM which contain approved information must also be clearly identified.

21.4.3 APPROVED SECTIONS OF A FCOM

21.4.3.1 FOIs must ensure that the approved sections of a FCOM contain all of the information that is required by the flight crew to operate the aircraft.

21.4.3.2 FOIs should evaluate the approved sections of a FCOM for the following:

- a. The procedures section of a FCOM must contain all procedures required by the AFM or RFM and for each operation the operator conducts. As a minimum, the operator must include sufficient detail to allow a trained crew to safely and effectively operate the aircraft. The procedures section of the manual may be divided into subsections such as normal, non-normal, and emergency procedures.

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- b. The operator's performance data in a FCOM must contain the data from the AFM or RFM and instructions on how to use that data.
- c. Operators may assign the responsibility for performing takeoff and landing data computations to flight crew or ground personnel.
- d. The flight crew must have access to adequate data in the cockpit, (including information for the specific airport and runway to be used) to perform the computations for which they are responsible.
- e. When takeoff and landing data is presented in tabular format for specific runways, it is often referred to as an airport analysis.
- f. Performance data may be published under separate cover and be given titles such as performance manual or airport analysis.
- g. When performance data is published under separate cover, it must be identified as a portion of the FCOM.
- h. Takeoff and landing performance data may be stored in an on board or ground based computer.
- i. The limitations section of a FCOM must be clearly identified as CAASL-FS approved. The limitations section of a FCOM must contain each limitation which is contained in the AFM or RFM.

21.4.4 ACCEPTED SECTIONS OF AN FCOM

21.4.4.1 Accepted sections of a FCOM may contain supplementary information such as aircraft and systems descriptions, an expanded explanation of procedures, special policies and procedures, and other selected topics pertinent to operation of the aircraft type.

- a. The accepted sections of a FCOM must conform to the regulations and safe operating practices but do not need to conform to corresponding sections of the AFM or RFM, either in format or content.
- b. FOIs should ensure that the FCOM developed by or for the operator contains sufficient explanation and guidance for flight crew use in the safe operation of the particular aircraft type.
- c. Background information or information that is not specific to the operation of the particular aircraft should be placed in a section of the Ops Manual, Part A, rather than in a supplementary section of the FCOM.

21.5 AIRCRAFT SYSTEMS DESCRIPTION

21.5.1 Operators must provide crewmembers with a systems description of an aircraft's systems and components that contains sufficient detail to allow flight crewmembers to adequately understand and perform all procedures in the flight manual.

21.5.2 AFMs, RFMs, and FCOMs may or may not contain a systems description section.

21.5.3 The aircraft systems description section of a manual is "accepted" as opposed to "approved."

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- 21.5.4 Operators may choose to place the systems description information in an accepted section of a FCOM or in a section of the Ops Manual, Part A, such as a training manual.

21.6 PROCEDURES

- 21.6.1 FOIs should not construe procedures published in an AFM or RFM to be the only or best means of accomplishing a specific objective. Because AFM or RFM procedures are formulated primarily for aircraft certification purposes, FOIs should encourage operators to develop procedures appropriate to revenue operations for inclusion in a FCOM.
- 21.6.2 Procedures incorporated in a FCOM should be tailored by the operator to accommodate the operator's type of operation, fleet standardization objectives, and cockpit management objectives. As an operator's operations become more complex, it is progressively more important to include detailed guidance in the flight manual, which is specifically tailored to the operator's operations.
- 21.6.3 Aircraft which have been modified by supplemental type certificate (STC) or by field approval (CAASL-FS Form) may require different procedures than unmodified aircraft. FOIs must coordinate approval of procedures with PMIs to ensure modifications are accounted for in the operator's procedures.
- 21.6.4 Procedural information included in a FCOM must be presented in a step by step format. A procedural step in an AFM or RFM procedure must be included in the equivalent FCOM procedure, unless the FOI approves the deletion through the process described in subparagraph I that follows.
- 21.6.5 Operators are responsible for developing effective standard operating procedures. The development process for standard operating procedures consists of the operator or other qualified party (such as the manufacturer) conducting a painstaking task analysis of the man machine environment relationship. Although this analysis is time consuming and expensive, it is necessary to meet the required level of safety in air transport operations.
- 21.6.5.1 General guidelines for FOIs to use when evaluating these procedures are contained in following paragraph. Specific guidelines for developing aircraft operating procedures are almost non-existent.
- 21.6.5.2 FOIs should encourage those operators that do not have extensive experience in developing their own procedures to follow the manufacturer's recommendations.
- 21.6.6 FOIs should ensure that operators standardize their operating procedures both within and across aircraft types to the greatest extent possible. FOIs should make operators aware of the following information concerning procedures for standardization.
- 21.6.6.1 Standardized procedures promote understanding and effective communications between crewmembers. Research has shown that standardized procedures and effective communications are significant factors in reducing error in the cockpit and in enhancing safety.
- 21.6.6.2 Crewmembers of most large operators operate numerous different aircraft during their career. Standardized procedures enhance a crewmembers transfer of learning and minimize negative transfer when the crewmember transitions from one aircraft to another.

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- 21.6.6.3 A complete standardization of procedures is not possible when there are significant differences between manufacturers and installed equipment. A high degree of standardization, however, is possible.
- 21.6.6.4 For example, the flight procedures for: engine failure after V1, engine fire after V1, and a missed approach with an engine out, can be designed to be identical. Each procedure might include the aircraft climbing at a reference speed to an identical clean up height, then accelerating, then retracting the flaps, and then continuing the climb at specified engine-out climb speed.
- 21.6.6.5 The reference speeds might change depending on the aircraft weight, but the procedure could otherwise be identical. If the operator designed these procedures carefully, they could be used on all aircraft in the operator's fleet.
- 21.6.7 FOIs may approve combined procedural steps.
- 21.6.7.1 For example, an AFM or RFM procedure specifies a two-step procedure such as the following: Step 1 - Smoke Goggles On, and Step 2 - O2 Mask On. The FOI could approve a one-step procedure such as the following: Step 1. Smoke Goggles and O2 Mask - On.
- 21.6.7.2 If there is a specific reason, however, for not combining the steps, the FOI must not approve such combinations. For instance, if in the previous example, for some reason the smoke goggle has to be put in place before the O2 mask can be put into place, the two step procedure should be retained.
- 21.6.7.3 FOIs may approve an arrangement of procedural steps in a different sequence from the sequence in the AFM or RFM. The operator must demonstrate to the FOIs satisfaction that the change in sequence is safe and effective through validation testing. The FOI shall ensure adverse effects are not introduced. For example, with many aircraft the flaps are required to be extended or the trim to be set to specific settings before an adequate control check can be accomplished. If this sequence is reversed, the control check is invalid.
- 21.6.7.4 FOIs may approve the combination of similar procedures into a single procedure. For example, it may be desirable for an operator to combine engine fire, engine failure, and severe engine damage procedures into a single procedure. FOIs may approve the resulting procedure when validation testing shows the procedure to be clear, easy to use, and if it retains the safeguards of the individual procedures it replaces. If the combined procedure results in a complex and error prone procedure, the FOI shall not approve it.
- 21.6.7.5 The FOI shall require the operator to present evidence that newly developed procedures are effective. This may be done by analysis, documentation, or validation tests. Tests may be conducted by the manufacturer, the operator, or another competent party (such as a contractor).
- 21.6.7.6 The FOI or a designated inspector qualified in the aircraft must evaluate the effectiveness of such tests.

21.7 NORMAL PROCEDURES

- 21.7.1 The normal procedures section of a FCOM must contain procedures for each normal operation that flight crewmembers are required to perform. Each normal procedure should be amplified by the operator with sufficient instruction to ensure that the procedure is properly accomplished. FOIs must ensure that this instruction is thorough enough to provide the least experienced flight crewmember with sufficient information to perform the procedures.

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- 21.7.2 Many operators include normal operating checklists and an explanation of how to accomplish each step of the checklists in the normal procedures section of the FCOM. This is an acceptable practice, however, it is important to understand that an explanation of how to perform the normal checklist is not the only material required in the normal procedures section of a FCOM.
- 21.7.3 Guidance for operational procedures for which there are no checklists (such as the takeoff procedure), must also be addressed.
- 21.7.4 Procedures for crew coordination and for the use of checklists must be included.
- 21.7.5 The procedures section of a FCOM must contain clearly specified crew duties. For example, the procedures section should contain a specific assignment for the crewmember that is responsible for setting power and maintaining directional control when the SIC is conducting a takeoff. If the FOI has any question about the validity or safety of an operator developed procedure, the FOI shall consult with the appropriate manufacturer. All such questions must be resolved before the FOI approves the procedure.
- 21.7.6 FOIs may require the operator to develop and publish normal procedures in a FCOM which are not in the AFM or RFM, when the procedures are necessary to ensure an adequate level of safety. Instrument approach procedures, adverse weather operations, long range navigation, and special procedures for CAT II and CAT III operations are all examples of required normal procedures which may not be in an AFM or RFM.
- 21.7.7 Operators may need to develop extensive procedures for operating computer based systems in the cockpit. A description of computer displays and controls does not normally provide a crewmember with adequate information to operate such systems. Procedures for computer operations should be keyed to menus and display prompts. Procedures should be written in an interactive format rather than as a rote listing of key strokes.

21.8 MANOEUVRES AND PROCEDURES DOCUMENT

- 21.8.1 Regulations requires that operators publish "detailed descriptions or pictorial displays of the approved normal, abnormal, and emergency manoeuvres, procedures and functions that will be performed during each flight training phase or flight check, indicating those manoeuvres, procedures and functions that are to be performed during the in-flight portions of flight training and flight checks." Operators must obtain approval of the manoeuvres and procedures descriptions before they may be published.
- 21.8.2 Before approving the operator's "manoeuvres and procedures document," FOIs shall ensure that it contains the tolerances which must be maintained in training and checking.
- 21.8.3 FOIs shall ensure that the operator's standards are appropriate for the aircraft being flown and for the operation being conducted.
- 21.8.4 Operators should use the Skill Test Standards (STS), and the manufacturer's recommendations and this handbook to establish these standards.
- 21.8.5 FOIs should use the guidance that follows when evaluating the standards used in an operator's manoeuvres and procedures document.

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- 21.8.5.1 The standards in use the Skill Test Standards are particularly appropriate for pilots of single engine and multiengine, general purpose families of airplanes and helicopters. There are many cases, however, in which the STS standards are inappropriate. For example, many large aircraft have speed command systems in which the correct final approach speed varies according to the CG and flight conditions.
- 21.8.5.2 When the operator conducts special operations, such as lower than standard minimum take-offs, the FOI shall ensure that the tolerances the operator chooses are appropriate to that operation. For example, on an RVR 600 takeoff with an engine loss, the applicant must be able to continue to track the runway centreline lights until the aircraft is rotated to the takeoff attitude.
- 21.8.6 Operators may choose to publish the manoeuvres and procedures description in a section of the Ops Manual, Part A for reference by flight crewmembers. The CAASL-FS recommends, however, that this description be placed in a section of the flight manual where it is available for in-flight reference.

21.9 NON-NORMAL AND EMERGENCY PROCEDURES

- 21.9.1 Non-normal (or abnormal) and emergency procedures in an AFM or RFM are usually presented in more detail than are normal procedures.
- 21.9.1.1 The steps and the order of steps in these procedures are often critical. FOIs must exercise caution in approving the modification of non-normal and emergency procedures.
- 21.9.1.2 The effect of most procedural steps on the airworthiness of the aircraft are obvious but the effects of some are not. For example, it may be necessary to depressurize a hydraulic system to successfully perform a manual landing gear extension.
- 21.9.1.3 Deleting a step or a change in the sequence steps of such a procedure could make the procedure ineffective.
- 21.9.2 There have been instances in which operators have erroneously proposed modifying an AFM or RFM procedure, and FOIs have unintentionally approved the modification which invalidated the certification basis of the aircraft.
- 21.9.3 FOIs should use the guidance that follows when evaluating an operator's non-normal or emergency procedures in AFMs, RFMs, or FCOMs.
- 21.9.3.1 When an operator proposes to modify a non-normal or emergency procedure, the operator must show that the modified procedure does not adversely affect the airworthiness of the aircraft. The operator may establish the safety and effectiveness of proposed procedures by analysis, documentation, or validation tests.
- 21.9.3.2 AI AFOs shall contact the applicable manufacturer and obtain concurrence before approving deletion of an item or the rearrangement of items on these checklists. This concurrence may be expressed informally (by telephone). This concurrence is not required if the operator provides evidence that the manufacturer has already concurred with the identical procedure for another party (such as another operator or manufacturer).



21.10 IMMEDIATE ACTIONS

- 21.10.1 An immediate action is an action that must be accomplished so expeditiously (in order to avoid or stabilize a hazardous situation) that time is not available for a crewmember to refer to a manual or checklist.
- 21.10.2 Crewmembers must be so familiar with these actions that they can perform them correctly and reliably from memory.
- 21.10.3 FOIs must ensure that immediate action situations are included in an operator's AFM, RFM, or FCOM, as appropriate. Situations that require immediate action include, but are not limited to the following—
- 21.10.3.1 Crewmember incapacitation
- 21.10.3.2 Imminent threat of loss of aircraft control
- 21.10.3.3 Imminent threat of destruction of a system or component which makes continued safety of the flight and subsequent landing improbable
- 21.10.4 Under this criteria, a flight crew donning oxygen masks in response to a depressurization or turning off the fuel and ignition in case of a hot start, are situations requiring mandatory immediate action items. The loss of thrust on a jet engine during cruise, however, would not normally require an immediate action item according to this criteria.
- 21.10.5 FOIs must ensure that immediate action items are explicitly identified as such in an operator's FCOM. It is not acceptable for immediate action items to be hidden (not specifically identified as an immediate action) in procedures or checklists.
- 21.10.6 Certain situations that either require or appear to require immediate action have proven to be a stimulus for evoking incorrect and inappropriate flight crew actions. Therefore, immediate action items must be strictly limited to only those actions necessary to stabilize the situation. FOIs must ensure that all remaining actions are accomplished by "challenge do verify" (CDV) checklists.
- 21.10.7 FOIs may approve an operator's proposal to replace immediate action items in an AFM or RFM procedure with challenge do verify (CDV) checklist procedures in a FCOM, provided the operator shows compliance with the criteria in this paragraph and also demonstrates an equivalent level of safety through validation tests.

21.10.8 MANDATORY CONFIRMATION ITEMS

- 21.10.8.1 There are certain critical procedural steps that shall be confirmed by a second crewmember before the step may be taken. FOIs must ensure that an operator's procedures which contain such critical procedural actions must clearly identify the critical actions and the crewmember who is responsible for giving the confirmation.
- 21.10.8.2 The types of procedural actions that require this confirmation include the following—

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- a. Actions resulting in the shutting down of an engine
- b. Actions resulting in the deactivation of flight controls
- c. Actions that if performed incorrectly, in the wrong sequence, or at the wrong time produce a catastrophic result, even if the incorrect action is not highly likely
- d. Actions where past experience or analysis has shown that there is a high probability for error or incorrect action and which creates a hazardous situation

21.10.9 CREWMEMBER ROLES

21.10.9.1 The FCOM must clearly define the various crewmember roles and responsibilities. FOIs should use the following guidance when ensuring that the operator clearly states policy and guidance for cockpit management in the AFM, RFM, or FCOM, as applicable.

21.10.9.2 PIC Responsibilities

The operator's policy and guidance should make it clear that the PIC's primary responsibility is to manage the actions of the crew and the conduct of the flight. While the PIC may delegate the management of the flight and manipulation of the controls to the SIC, the FCOM must not indicate that the PIC can delegate the responsibility for safe conduct of the flight.

21.10.9.3 Responsibilities of Flight Crewmembers Not in Command

The operator's flight manual should contain policy and guidance to those flight crewmembers not in command, as to their responsibilities to the PIC and their responsibilities for the safe conduct of the flight.

21.10.9.4 SIC Responsibilities

- a. The FCOM must contain guidance for the PIC concerning the conditions and circumstances in which an SIC may operate the aircraft.
- b. The operator's policies must delineate the limits of authority delegated to the SIC when the SIC is the pilot flying (P-F).
- c. The operator's policies should address crew management in critical situations.
 - For example, there may be certain situations in which the SIC should be the pilot flying (P-F) so that the PIC can concentrate on managing those situations, particularly ensuring that required actions and appropriate checklists are properly accomplished.
 - Procedures for transfer of control must be clearly addressed in the FCOM.

21.10.9.5 Communications

In general, proper cockpit management requires effective communication and cooperative action between crewmembers which form consecutive closed loops.



21.10.9.6 Coordination

Research has shown that effective flight crews coordinate their actions before any action is required. FOIs shall ensure that FCOMs contain a requirement for briefings and also adequate guidance for the content of those briefings.

21.11 OPERATIONS NOT EVALUATED IN AIRCRAFT CERTIFICATION

21.11.1 If the operator proposes to conduct operations which have not been evaluated during aircraft certification, the FOI must ensure that the operator has developed and obtained approval of procedures for the conduct of the proposed operation.

21.11.2 Such operations are often indicated by the absence of a procedure for the operation in the AFM or RFM. Examples of such operations could include power back and taxi with engine shutdown.

21.11.3 FOIs should use the following guidance when evaluating those operations not evaluated during aircraft certification.

21.11.4 FOIs must ensure that each operation conducted must be specifically addressed by a procedure. For example, it should not be assumed that a procedure for shutting down and then restarting an engine during a taxi delay is equivalent to a procedure for delaying an engine start on initial taxi out.

21.11.5 The same procedure may not be used for more than one operation unless analysis shows that more than one operation may be safely conducted using the same procedure.

21.11.6 FOIs must ensure that an operational procedure is thoroughly coordinated with airworthiness inspectors. Since adverse effects that a procedure could cause to the airworthiness of an aircraft or its systems may not be immediately apparent, the FOI must ensure that coordination with airworthiness is required. For example, a procedure for taxiing with engine shutdown could have a detrimental effect on the landing gear system if high asymmetrical engine thrust is used during sharp turns.

21.11.7 If there is any question concerning the effects a procedure may have on the airworthiness of the aircraft, the FOI must research this further with aircraft type experts before granting approval of the procedures.

21.11.8 LIMITATIONS

21.11.8.1 FOIs must ensure that when operating limitations are incorporated in a FCOM, that each limitation was transferred from the AFM or RFM. FOIs should use the following guidance when evaluating the limitations of an operator's FCOM.

21.11.8.2 FOIs should evaluate the operator's FCOM to ensure that all AFM or RFM operating limitations are published in the FCOM and are clearly identified as AFM or RFM limitations.

21.11.8.3 The limitations section of a FCOM must contain every limitation from the AFM or RFM.

21.11.8.4 Operators may add limitations to FCOMs which were not in an AFM or RFM limitation.

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- 21.11.8.5 One method of accomplishing this is for the operator to express all operator imposed limitations as policy statements in applicable procedures.
- 21.11.8.6 When the operator chooses to blend AFM or RFM and operator imposed limitations in the limitations section of a FCOM, the FOI must ensure that the operator used a method for clearly distinguishing each AFM or RFM limitation from the operator imposed limitations.
- 21.11.8.7 The operator is responsible for informing crewmembers of all AFM or RFM operating limitations.
- 21.11.8.8 Crewmembers are responsible for observing all AFM or RFM limitations. The FOI must ensure that the FCOM contains a statement that crewmembers are responsible for being aware of and for observing all limitations.



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Chapter 22 - STANDARD OPERATING PROCEDURES

22.1 SUMMARY OF REQUIREMENTS

22.1.1 BASIC REQUIREMENT

22.1.1.1 The AOC holder is required by regulations to shall establish, and keep current, standard operating procedures (SOPs) appropriate to the type and variant of aircraft provide guidance to flight operational personnel for the safe operation of the aircraft including for each phase of Flight.

22.1.2 THE EXTENT OF THE SOPS

22.1.2.1 As an integral part of its SOPs, the AOC holder is required establish, and keep current

- a. Aircraft-specific expanded checklists;
- b. Aircraft-specific condensed checklists
- c. Aircraft-specific operational profiles for manoeuvres;
- d. Standard crew briefings; and
- e. Standard call-outs and responses.

22.1.3 CONTENT & DESIGN

22.1.3.1 AOC holders are required to ensure that approved SOPs and checklist procedures include each item necessary for flight crew members to check for safety—

- a. Before starting engines,
- b. Taking off,
- c. Landing, and
- d. For engine and systems abnormalities and emergencies.

22.1.3.2 AOC holders are required ensure that the SOPs and checklist procedures are designed so that a flight crew member will not need to rely upon their memory for items to be checked.

22.1.3.3 The design and utilization of the SOPs and checklists is required to observe relevant human factors principles.

22.1.4 USE DURING TRAINING

22.1.4.1 The AOC holder shall ensure that its flight crews complete training for the use of the SOPs and checklists, including—

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- a. Initial aircraft-specific training;
- b. Recurrent aircraft-specific training; and
- c. Aircraft specific differences training for variants of aircraft types.

22.1.5 AVAILABLE & COMPLIANCE

22.1.5.1 The AOC holder shall ensure that the SOPs and checklists are readily usable in the cockpit of each aircraft in sufficient quantity for ground and flight operations. The AOC holder shall require the flight crew to comply with the SOPs and checklists when operating the aircraft.

22.1.6 FLIGHT CREW STANDARDIZATION PROGRAM

22.1.6.1 AOC holders are required to establish and maintain comprehensive flight crew standardization program to ensure continuous conformance with the SOPs and checklists.

22.1.6.2 That program will consist of annual training, bi-annual proficiency checks, annual line checks and random line checks by designated check airman and flight operations inspectors.

22.2 OBJECTIVES OF STANDARD OPERATING PROCEDURES

22.2.1 Operators are required establish standard operating procedures (SOPs), including checklists and crew briefings, that provide guidance to flight operations personnel to ensure safe, efficient, logical and predictable means of carrying out flight procedures.

22.2.2 SOPs specify a sequence of tasks and actions to ensure that flight procedures can be carried out in standardized manner. To achieve these objectives, SOPs should unambiguously express—

- a. What the task is;
- b. When the task is to be conducted (time and sequence);
- c. By whom the task is to be conducted;
- d. How the task is to be done (actions);
- e. What the sequence of actions consists of; and
- f. What type of feedback is to be provided as a result of the actions (verbal call-out, instrument indication, switch position, etc.).

22.2.3 SOP DESIGN

22.2.3.1 To ensure compatibility with specific operational environments and compliance by flight operations personnel, SOPs design should take into consideration—

- a. The nature of the operator's environment and type of operation;
- b. The operational philosophy, including crew coordination;



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- c. The training philosophy, including human performance training;
- d. The operator's corporate culture, including the degree of flexibility to be built into SOPs design;
- e. The levels of experience of different user groups, such as flight crews, aircraft maintenance engineers and cabin attendants;
- f. Resource conservation policies, such as fuel conservation or wear on power plants and systems;
- g. Flight deck automation, including flight deck and systems layout and supporting documentation;
- h. The compatibility between SOPs and operational documentation; and
- i. Procedural deviation during abnormal/unforeseen situations.

22.2.3.2 Flight operations personnel should be involved in the development of SOPs.

22.2.4 SOP IMPLEMENTATION & USE

2.2.4.1 Operators must establish a formal process of feedback from flight operations personnel to ensure standardization, compliance and evaluation of reasons for non-compliance during SOPs implementation and use.

22.3 CHECKLISTS

22.3.1 GENERAL

22.3.1.1 Operators are required to establish checklists as an integral part of standard operating procedures (SOPs). Checklists should describe the actions relevant to specific phases of operations (engine start, taxi, take-off, etc.) that flight crews must perform or verify and which relate to flight safety.

22.3.1.2 Checklists should also provide a framework for verifying aircraft and systems configuration that guards against vulnerabilities in human performance.

22.3.2 CHECKLIST OBJECTIVES

22.3.2.1 Normal checklists should aid flight crews in the process of configuring the aircraft and its systems by—

- a. Providing logical sequences of coverage of the flight deck panels;
- b. Providing logical sequences of actions to meet both internal and external flight deck operational requirements;
- c. Allowing mutual monitoring among flight crew members to keep all flight crew members in the information loop; and

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- d. Facilitating crew coordination to assure a logical distribution of flight deck tasks.

22.3.2.2 Checklists for use in abnormal situations and those for emergency situations should aid flight crews in coping with malfunctions of aircraft systems and/or emergency situations.

22.3.2.3 They should also guard against vulnerabilities in human performance during high workload situations by fulfilling the objectives of checklists and, in addition, by—

- a. Ensuring a clear allocation of duties to be performed by each flight crew member;
- b. Acting as a guide to flight crews for diagnosis, decision making and problem solving (prescribing sequences of steps and/or actions); and
- c. Ensuring that critical actions are taken in a timely and sequential manner.

22.3.3 CHECKLIST DESIGN

22.3.3.1 Order of Checklist Items

- a. The following factors should be considered when deciding the order of the items in checklists—
 - The operational sequence of aircraft systems so that items are sequenced in the order of the steps for activation and operation of these systems;
 - The physical flight deck location of items so that they are sequenced following a flow pattern;
 - The operational environment so that the sequence of checklists considers the duties of other operational personnel such as cabin crew and flight operations officers;
 - Operator policies (for example, resource conservation policies such as single-engine taxi) that may impinge on the operational logic of checklists;
 - Verification and duplication of critical configuration-related items so that they are checked in the normal sequence and again immediately before the phase of flight for which they are critical; and 6) sequencing of critical items in abnormal and emergency checklists so that items most critical are completed first.
- b. Critical items should appear no more than twice on a given checklist. Critical items should be verified by more than one flight crew member.

22.3.3.2 Number of Checklist Items

The number of items in checklists should be restricted to those critical to flight safety.

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22.3.3.3 Checklist Interruptions

SOPs should include techniques to ensure a step-by step, uninterrupted sequence of completing checklists. SOPs should unambiguously indicate the actions by flight crews in case of checklist interruptions.

22.3.3.4 Checklist Ambiguity

Checklist responses should portray the actual status or the value of the item (switches, levers, lights, quantities, etc.). Checklists should avoid non-specific responses such as “set”, “checked” or “completed”.

22.3.3.5 Checklist Coupling

- a. Checklists should be coupled to specific phases of flight (engine start, taxi, take-off, etc.). SOPs should avoid tight coupling of checklists with the critical part of a phase of flight (for example, completing the take-off checklist on the active runway).
- b. SOPs should dictate a use of checklists that allows buffers for detection and recovery from incorrect configurations.

22.3.3.6 Typography

- a. Checklist layout and graphical design should observe basic principles of typography, including at least legibility of print (discriminatively) and readability under all flight deck lighting conditions.
- b. If colour coding is used, standard industry colour coding should be observed in checklist graphical design. Normal checklists should be identified by green headings, system malfunctions by yellow headings, and emergency checklists by red headings.
- c. Colour coding should not be the only means of identifying normal, abnormal and emergency checklists.

22.4 CREW BRIEFINGS

22.4.1 GENERAL

22.4.1.1 Operators shall establish crew briefings as an integral part of standard operating procedures (SOPs). Crew briefings communicate duties, standardize activities, ensure that a plan of action is shared by crew members and enhance crew situational awareness.

22.4.1.2 Operators shall establish both individual and combined crew briefings for flight crew and cabin crew.

22.4.2 CREW BRIEFING OBJECTIVES

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22.4.2.1 Crew briefings should aid crews in performing safety-critical actions relevant to specific phases of flight by—

- a. Refreshing prior knowledge to make it more readily accessible in real-time during flight;
- b. Constructing a shared mental picture of the situation to support situational awareness;
- c. Building a plan of action and transmitting it to crew members to promote effective error detection and management; and
- d. Preparing crew members for responses to foreseeable hazards to enable prompt and effective reaction.

22.4.3 CREW BRIEFING PRINCIPLES

22.4.3.1 The following principles should be considered when establishing crew briefings—

- a. Crew briefings should be short and should not include more than ten items. If more than ten items are necessary, consideration should be given to splitting the briefing into sequential phases of the flight;
- b. Crew briefings should be simple and succinct, yet sufficiently comprehensive to promote understanding of the plan of action among all crew members;
- c. Crew briefings should be interactive and where possible should use a question-and-answer format;
- d. Crew briefings should be scheduled so as not to interfere with, and to provide adequate time for, the performance of operational tasks; and
- e. Crew briefings should achieve a balance between effectiveness and continual repetition of recurring items.
- f. Crew briefings that become routine recitations do not refresh prior knowledge and are ineffective.

22.4.3.2 Any intended deviation from SOPs required by operational circumstances should be included as a specific briefing item.

22.4.4 CREW BRIEFING APPLICATION

22.4.4.1 Operators shall implement flight and cabin crew briefings for specific phases of operations to include actual conditions and circumstances, as well as special aspects of operations.

22.4.4.2 Flight crew briefings shall be conducted for, but not be limited to, the following phases of operations—

- a. Pre-flight;

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- b. Departure; and
- c. Arrival.

22.4.4.3 Cabin crew briefings shall be conducted for, but not be limited to, the following phases of operations—

- a. Pre-flight; and
- b. First departure of the day.

22.4.4.4 Cabin crew briefings should be conducted following changes of aircraft type or crew and before flights involving a stop of more than two hours.

22.4.5 CREW BRIEFING SCOPE

22.4.5.1 Pre-flight briefings shall include both flight crew and cabin crew.

22.4.5.2 Pre-flight briefings should focus on crew coordination as well as aircraft operational issues. They should include, but not be limited to—

- a. Any information necessary for the flight, including unserviceable equipment or abnormalities that may affect operational or passenger safety requirements;
- b. Essential communications, and emergency and safety procedures; and
- c. Weather conditions.

22.4.5.3 Flight crew departure briefings should prioritize all relevant conditions that exist for the take-off and climb. They should include, but not be limited to

- a. Runway in use, aircraft configuration and take-off speeds;
- b. Taxi-out route and relevant hot spots;
- c. Departure procedures;
- d. Departure routes;
- e. Navigation and communications equipment set-up;
- f. Aerodrome, terrain and performance restrictions, including noise abatement procedures (if applicable);
- g. Take-off alternates (if applicable);
- h. Any item(s) included in the minimum equipment list (if applicable);
- i. Review of applicable emergency procedures; and
- j. Applicable standard call-outs.

22.4.5.4 Flight crew arrival briefings should prioritize all relevant conditions that exist for the descent, approach and landing. They should include, but not be limited to—

- a. Terrain restrictions and minimum safe altitudes during descent;
- b. Arrival routes;
- c. Instrument or visual approach procedures and runway in use;



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- d. Operational minima, aircraft configuration, and landing speeds;
 - e. Navigation and communications equipment set-up;
 - f. Taxi-in route and relevant hot spots;
 - g. Missed approach procedures;
 - h. Alternate aerodromes and fuel considerations;
 - i. Review of applicable emergency procedures;
 - j. Applicable standard call-outs; and
 - k. Cold temperature correction.
- 22.4.5.5 Cabin crew briefings should prioritize all relevant conditions that exist for the departure. They should include, but not be limited to—
- a. Assignment of take-off/landing positions;
 - b. Review of emergency equipment;
 - c. Passengers requiring special attention;
 - d. The silent review process;
 - e. Review of applicable emergencies;
 - f. Security or service-related topics that may impact on passenger or crew safety; and
 - g. Any additional information provided by the operator, including review of new procedures, equipment and systems.

22.5 AMPLIFIED INSTRUCTIONS: CHECKLISTS DESIGN & USE

22.5.1 All AOC holders must provide aircraft checklists to their flight crewmembers. Flight crewmembers are required to use these aircraft checklists in commercial air transport operations. For AOC holders, aircraft checklists must be approved by the CAASL-FSR

22.5.2 DEFINITION

22.5.2.1 A checklist is a formal list used to identify, schedule, compare, or verify a group of elements or actions.

22.5.2.2 A checklist is used as a visual or oral aid that enables the user to overcome the limitations of short term human memory.

22.5.2.3 Although a checklist may be published in a manual, it is designed for independent use so that the user does not have to reference a manual.

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22.5.2.4 Checklists are used to ensure that a particular series of specified actions or procedures are accomplished in correct sequence.

22.5.2.5 Aircraft checklists, in particular, are used to verify that the correct aircraft configuration has been established in specified phases of flight.

22.5.2.6 The silent review process is the self-review of individual actions in the event of emergencies.

22.5.3 STANDARDIZATION

22.5.3.1 Aircraft checklists and the AOC holder's policies for the use of checklists are one means by which AOC holder's structure and define flight crewmember roles.

22.5.3.2 FOIs must review the AOC holder's policies and procedures for checklist use as an integral part of the checklist review process.

22.5.3.3 FOIs shall ensure that checklists and the AOC holder's procedures for checklist use are standardized (to the extent allowed by individual aircraft differences) for all aircraft in the AOC holder's fleet.

22.5.4 CAASL-FS CHECKLIST APPROVAL

22.5.4.1 FOIs and AOC holders must understand that aircraft checklists published in AFMs or RFMs are not approved for AOC holders.

22.5.4.2 When a AOC holder proposes to use an AFM checklist, the FOI must review and approve that checklist for that AOC holder.

22.5.4.3 When an AOC holder proposes to use an AFM or RFM checklist, the FOI must review the checklist and determine that it is acceptable for that AOC holder's use.

22.6 CHECKLIST CONTENT

22.6.1 Aircraft checklists have traditionally been divided into three categories. For the purpose of this handbook, these categories are referred to as normal, non-normal, and emergency.

22.6.2 AOC holders may use other titles for these categories such as abnormal instead of non-normal.

22.6.3 AOC holders may also further divide these categories into subcategories such as alternate and supplemental. FOIs shall use the following guidance when evaluating the content of an AOC holder's checklists.

22.6.4 CONTENT

22.6.4.1 FOIs shall ensure aircraft checklists are limited to action items or verification items. The aircraft checklist should not contain elaboration or explanation.

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- 22.6.4.2 FOIs must ensure that the required actions and decisions for flight crews when performing checklist are thoroughly described in the AOC holder's manual and training programme.
- 22.6.4.3 FOIs should consider the following when evaluating aircraft checklist content:
- 22.6.4.4 Non-normal and emergency checklists must contain each sequential step of a procedure.
- 22.6.4.5 A normal checklist is typically a listing of action items to be performed and verified at a particular point in flight.
- 22.6.4.6 Normal checklist items do not necessarily represent a procedural step and may even represent completion of an entire procedure. For example, the item "Gear - Up and Locked" could indicate the gear handle had been raised, the gear indications checked, the gear handle had been placed in the neutral position to check the up locks, and that the handle had then been returned to the up position.
- 22.6.4.7 Most normal procedures do not require itemization or incorporation into a checklist.
- 22.6.4.8 For example, the procedures for making normal takeoff and landings are not itemized in a checklist format but described in a narrative format.

22.6.5 CRITICALITY OF CHECKLIST ITEMS

- 22.6.5.1 Checklist items can be ranked in criticality according to the potential effect of the crewmember failing to perform the action.
- Critical items are those items which, if not correctly performed, have a direct, adverse effect on safety.
 - Noncritical items are "housekeeping" items or systems management items, which for operating practices must be routinely accomplished during a specific phase of flight, but if omitted would have a minimal effect on safety.
 - An item may be considered to be critical on one checklist but noncritical on another checklist. For example, a flight crews failure to set the flaps while accomplishing the before takeoff checklist has had extremely adverse consequences. A flight crew's failure to retract the flaps while performing the after landing checklist, however, has had little effect on safety.

22.6.6 DIVERSION OF THE FLIGHT CREWS ATTENTION

- 22.6.6.1 The flight crew's attention is diverted from other tasks when performing a checklist.
- 22.6.6.2 Checklists must be kept as short as practical to minimize "heads down" time and diversion of the crew's attention while performing the checklist.
- Each additional item that is added to a checklist increases the potential for: interruption when the checklist is accomplished, diversion of the crew's attention at a critical point, and the missing of critical items.

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- b. Items not associated with aircraft operations (such as calls to the company) shall not be placed on the checklist.

22.6.7 AIRCRAFT SOPHISTICATION & CHECKLIST DESIGN

22.6.7.1 The degree of technological sophistication in the design of the aircraft directly affects checklist items.

- a. In older aircraft, the flight crew must manually select and monitor most items.
- b. In technologically advanced aircraft the same items are accomplished and monitored by automatic systems which relieve the flight crew of these tasks.
- c. Checklists for technologically advanced aircraft tend to be shorter and simpler than those for older aircraft.

22.6.8 FLEET STANDARDIZATION

22.6.8.1 Checklists for technologically sophisticated aircraft are typically shorter and simpler than those for older aircraft. The items on checklists for technologically advanced aircraft, however, are normally present on checklists for aircraft with older technology.

22.6.8.2 FOIs shall require AOC holders to evaluate the feasibility of placing common checklist items on checklists with standard titles for all aircraft (such as before start, before takeoff, or before landing checklists). Items should appear in a standard sequence to the degree possible.

22.6.8.3 FOIs should not normally approve placing an item on a checklist which is not required for that specific aircraft solely because the item is required in other aircraft of the fleet. FOIs may make exceptions, however, when the AOC holder provides adequate justification.

22.7 METHODS OF CHECKLIST DESIGN

22.7.1 AOC holders may choose from at least two accepted methods of checklist design: the "challenge do verify" (CDV) method and the "do verify" (DV) method.

22.7.2 Available evidence suggests that safety is enhanced when the AOC holder adopts and applies a consistent checklist design policy.

22.7.3 FOIs should use the following informative guidance when reviewing the design of an AOC holder's aircraft checklists.

22.7.4 CHALLENGE-DO-VERIFY

22.7.4.1 The challenge do verify (CDV) method consists of a crewmember making a challenge before an action is initiated, taking the action, and then verifying that the action item has been accomplished.

22.7.4.2 The CDV method is most effective when one crewmember issues the challenge and the second crewmember takes the action and responds to the first crewmember, verifying that



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the action was taken. This method requires that the checklist be accomplished methodically, one item at a time, in an unvarying sequence.

22.7.4.3 The primary advantage of the CDV method is the deliberate and systematic manner in which each action item must be accomplished. The CDV method keeps all crewmembers involved (in the loop), provides for concurrence from a second crewmember before an action is taken, and provides positive confirmation that the action was accomplished.

22.7.4.4 The disadvantages of the CDV method are that it is rigid and inflexible and that crewmembers cannot accomplish different tasks at the same time.

22.7.5 DO-VERIFY

22.7.5.1 The "do verify" (DV) method (or "clean up" method) consists of the checklist being accomplished in a variable sequence without a preliminary challenge. After all of the action items on the checklist have been completed, the checklist is then read again while each item is verified.

- a. The DV method allows the flight crew to use flow patterns from memory to accomplish a series of actions quickly and efficiently.
- b. Each individual crewmember can work independently which helps balance the workload between crewmembers.
- c. The DV method has a higher inherent risk of an item on the checklist being missed than does the CDV method.

22.7.6 SELECTION OF DESIGN METHOD

22.7.6.1 Both the CDV and the DV methods of checklist design are currently being successfully used for normal checklists.

22.7.6.2 Traditionally, AOC holders have preferred the DV method for normal checklists and the CDV method for non-normal and emergency checklists.

22.7.6.3 AOC holders have, however, successfully used the CDV method for all checklists. FOIs may approve either method for normal checklists.

- a. In most circumstances non-normal and emergency checklists are more effective when the CDV method is used.
- b. The correct accomplishment of the actions and procedures incorporated in the non-normal and emergency checklist categories is critical and warrants a methodical approach.
- c. Since these checklists are seldom used, however, crewmembers are usually not as familiar with the procedures incorporated into these checklists as they are with the procedures in normal checklists.



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22.7.6.4 In addition, many non-normal and emergency checklists do not lend themselves to developing flow patterns which crewmembers can readily recall.

22.7.6.5 The CDV method also enforces crew coordination, cross-checking, and verification, all of which aid the crewmember in overcoming the adverse effects of stress.

22.7.7 MECHANICAL OR ELECTRONIC CHECKLISTS

22.7.7.1 Mechanical or electronic devices differ in format from paper, hand-held checklists, but not in the design method or use.

- a. The actions these checklists contain and their sequencing shall be consistent with the paper version (when required) available to the flight crew.
- b. Some electronic checklists will have an ability to automatically detect the completion of an action based on switch position, system state, or both.
- c. In electronic checklists, the verification in the CDV or DV methods may be a matter of observing that the items are complete via the display method used (for example, completed items turn green).
- d. The CDV or DV methods can be applied to any type of checklist.

22.7.8 VERIFICATION

22.7.8.1 FOIs should keep in mind that all checklist designs are subject to human error.

- a. Crewmembers may omit and skip checklist items.
- b. Crewmembers may erroneously respond to a checklist at times believing that an item or task was accomplished when it was not.
- c. At times, crewmembers may see what they expect to see rather than what has actually been accomplished.
- d. Both the CDV and the DV methods are subject to such human errors.

22.8 CHECKLIST PHILOSOPHY

22.8.1 FOIs must ensure that the appropriate sections of the AOC holder's manuals contain the specific crewmember responsibilities for monitoring, verifying, and managing the accomplishment of checklists.

22.8.2 These responsibilities should appear either as policy statements or as specific directives. FOIs should use the guidance that follows when evaluating an AOC holder's policies for the accomplishment of checklists.

22.8.3 OBJECTIVE OF POLICY STATEMENTS & DIRECTIVES

22.8.3.1 The primary objective of the AOC holder's policy statements or directives is to standardize crewmember interaction.

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22.8.3.2 These statements should include, but not be limited to, the following items—

- a. Flight crew responsibilities for maintaining aircraft control, analysing situations, and for requesting the appropriate checklist in non-normal and emergency situations
- b. The specified crewmember responsible for initiating each checklist
- c. The specified time when each checklist is to be initiated
- d. The specified crewmember responsible for accomplishing each item on the checklist
- e. The specified crewmember responsible for ensuring that each checklist is completed and for reporting that completion to the crew
- f. Crewmember responsibilities for bringing to the attention of the PIC and the rest of the crew any observed deviation from prescribed procedures

22.8.4 METHODS FOR MANAGING CHECKLIST ACCOMPLISHMENT

22.8.4.1 The following subparagraphs each contain a discussion of recommended methods an AOC holder may use for managing checklist accomplishment. These methods are not all-inclusive and may not meet all of the AOC holder's needs. FOIs shall not interpret these methods as the only ones which are acceptable—

- a. **For single pilot aircraft**, the CAASL-FSS recommends that AOC holders mount the before takeoff checklist and the before landing checklist on the instrument panel by means of a placard. When aircraft characteristics allow, the AOC holder should develop touch verification procedures which contain a requirement that the pilot touch each control to verify it is in the correct position.
- b. **For two pilot aircraft** in which only the PIC has ground steering control, the recommended method for accomplishing checklists is for the SIC to read all checklists when the aircraft is in motion on the ground. The recommended method for those aircraft in which either pilot can steer on the ground is for the pilot monitoring (PM) to read all checklists. In all two pilot aircraft, the PM should read all checklists when the aircraft is airborne.
- c. **For three crewmember aircraft—**

The recommended method is for the SIC to read the flight engineer (FE) portion of the before engine start checklist, so that the PIC can observe and verify the configuration of the flight engineer panel as the FE responds to each item on the checklist.

Since the PM is the crewmember most subject to interruptions from radio communications, it is recommended that the FE should read all normal Checklists and verify that each pilot action has been taken when the aircraft is in motion.

The FE should have the explicit task of verifying that critical items have been performed by the pilots, whether or not the FE has verbal responses for those items.



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In those non-normal or emergency situations which involve significant activity by the FE, it is recommended that the PM read the checklist and verify FE actions while the FE performs and responds to the items.

- d. **For all aircraft**, the crewmember responsible for reading the checklist should be responsible for ensuring that the checklist is completed systematically and expeditiously. This crewmember should be responsible for managing interruptions, cross-checking controls and indicators to ensure that the required actions have been accomplished, and for reporting that the checklist has been completed.
- e. **The pilot flying (P-F)** should not be distracted from controlling the aircraft to perform a checklist item which another crewmember can accomplish. The P-F should activate only those switches or controls (other than the manual or automatic flight controls, throttles, and nose wheel steering) which are not within practical reach of another crewmember. Only one pilot should be "heads down" at any time.
- f. **In the prestart phase**, flight guidance and navigation checklist items have proven to be critical items. A response should be required from both pilots (and FE, if applicable) when the same setting is required for more than one device (such as computers, flight instruments, and altimeters). Inertial platform alignment and computer programming should be accomplished by one crewmember and independently confirmed by another crewmember. As many of these checklist items as possible should be accomplished and verified before the aircraft is moved.
- g. **In the taxi and pre-takeoff phases**, aircraft configuration (such as flaps, trim, and speed brakes) and flight guidance items (such as heading, flight director, altitude select panel settings, and airspeed bugs) have proven to be critical. All flight crewmembers should confirm these items and at least two crewmembers should respond to applicable checklist items.
- h. **On approach**, flight guidance checklist items have proven to be critical items. At least two crewmembers should confirm and respond to these items. A response should be required from each pilot when the same setting is required on two separate devices (such as computers, flight instruments, or altimeters).
- i. **All checklist items** which are critical in the before landing phase vary with the type of airplane involved. In the operation of small airplanes, the landing gear has proven to be a critical checklist item and both pilots should confirm and respond to this item. Although the landing gear and flaps are critical items for large, transport category airplanes, the multiple warning devices and systems which are associated with these systems make the need for a response and confirmation by both pilots less critical.
- j. **All checklists**, except the after takeoff and after landing checklists, should be accomplished by one crewmember reading the checklist items and a second crewmember confirming and responding to each item. FOIs shall ensure that critical items on the before takeoff and before landing checklists are confirmed and responded to by at least two crewmembers.
- k. **All checklists** must be designed so that the flight crew can maintain an adequate visual scan and monitor ATC communications while simultaneously controlling the aircraft.

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- The recommended method is for the AOC holder to group the systems management checklist items after the configuration, thrust, and flight guidance items for each phase of flight.
 - When systems management checklist items must be accomplished in a high workload environment, it is recommended they be accomplished by a single crewmember.
 - Usually the after takeoff and after landing checklists items can be accomplished silently as these items have not proven to be critical.
- l. AOC holders should direct crewmembers to refrain from accomplishing action items assigned to other crewmembers. Crewmembers should be directed that when they observe that another crewmember is not taking or has not taken a required action they must inform the crewmember, the PIC, or the whole crew, as appropriate. One AOC holder was able to reduce altitude deviations from an average of two per week to.
- m. Checklists should not be depended on to initiate changes in aircraft configuration.
- AOC holders should key aircraft configuration changes to specific operational events. For example, the AOC holder may direct the landing gear to be extended at glide slope intercept.
 - For any adjustment of thrust, or configuration, a command from the P-F and an acknowledgement from the crewmember taking the action is required.
- n. Flight crewmembers frequently cannot complete a checklist when initiated either because of an interruption or because an item on the checklist has not yet been accomplished. FOIs shall ensure that each AOC holder has developed policies for the management of these situations.
- For short delays, the recommended policy is for the flight crew to hold the checklist until the interruption is over and the item can be completed.
 - When the checklist item is completed, the challenge should be repeated, the proper response given, and the checklist continued.

22.8.4.2 Checklist Interruptions

- a. AOC holders must establish procedures to ensure that the correct checklist sequence is re-established when unusual events interrupt the normal sequence of a flight.
- For example, crewmember actions during normal sequences of flights are interrupted when long delays are encountered on taxi-out or when crewmembers vacate the flight deck.

22.8.4.3 Vacating Flight Deck With Visitors in Cockpit

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- a. AOC holders must establish additional checklist management procedures for checklist interruptions that occur when any flight crewmember who is assigned to a flight deck duty station vacates the cockpit to perform other duties, leaving persons who are occupying cockpit observer seats or who visit the cockpit during such absence with unsupervised access to unmanned flight deck duty stations.
- b. If any checklist interruption of this kind occurs and any person has access to an unmanned flight deck, then each checklist item in all of the checklists prior to engine start must be re accomplished.

22.8.4.4 Verification of Items Accomplished

- a. The flight crew must verify the accomplishment of all items on checklists that have been accomplished up to the point where the current checklist was interrupted.
- b. Minimum Requirement. As each checklist item is re accomplished, the minimum that is required is a verification that switches, control handles, knobs, or levers are in the positions prescribed and that the associated indicator lights and instrument readings confirm the proper positioning of the applicable switches, control handles, knobs, or levers.

Additional Requirements—

- If the verification check reveals that any switch, control handle, knob, or lever is not in the position prescribed, then the full procedure, including any associated checks for the particular checklist item(s), must be re accomplished.
- If the indicator lights or instrument readings associated with the proper positioning of particular switches, control handles, knobs, or levers are not in agreement with the prescribed positions of these control means and re accomplishment of the full procedure, including any associated checks for the particular checklist item(s), does not correct the disagreement, then the flight crew must log the discrepancy in the aircraft maintenance log.

22.8.4.5 FOI Responsibilities

- a. FOIs of turbojet and large aircraft operators shall ensure that their assigned certificate holders conform to the policies described in this subparagraph.
- b. FOIs of small aircraft operators shall encourage their assigned certificate holders to conform to these policies.

22.9 DEVELOPMENT AND SEQUENCING OF CHECKLIST ITEMS

- 22.9.1 FOIs must ensure that checklists are developed from a careful task analysis and are consistent with the procedures section of the AOC holder's flight manual. Phase checklist items must be in an appropriate and logical sequence.

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- 22.9.2 When a checklist represents an abbreviated procedure, that checklist must follow the procedural sequence. FOIs should use the following additional guidelines concerning individual topics of checklist design.
- 22.9.3 AOC holders should standardize the sequence of checklist items as much as possible across aircraft types.
- 22.9.3.1 When the AOC holder has a choice as to where an item should be placed on a checklist, it should be placed at a point where the crew workload is lowest.
- 22.9.4 AOC holders should keep checklists as short as possible in order to minimize interruptions. When an AOC holder is using an electronic checklist with the ability to automatically detect the completion of an action, the FOI shall encourage the use of that ability to the maximum extent possible.
- 22.9.4.1 AOC holders should sequence checklist items to minimize interruptions of checklist accomplishment. For example, sequencing the "INS NAV MODE" as the first item on the engine start checklist may allow the flight crew to call for and complete the before engine start checklist at a convenient time even though INS alignment is not complete.
- 22.9.4.2 Two short checklists may be preferable to a single long one. AOC holders may place a line or otherwise mark a checklist where the checklist can be held until a specific event occurs. This practice is acceptable because in essence, it creates two separate checklists.
- 22.9.5 AOC holders must include required pre-flight tests on checklists but should design checklists to preclude the unnecessary testing of systems.
- 22.9.5.1 Warning systems with built-in test and automatic monitor circuits do not need to be checked or included on checklists unless required by the AFM or RFM.
- 22.9.5.2 Many test switches in the cockpit are designed for use by maintenance personnel. AOC holders should not require flight crewmembers to perform these tests as a normal procedure.
- 22.9.6 FOIs may approve the AOC holder grouping required functional checks on a specific checklist which is performed before the first flight of the day (or at some other logical interval) and not repeated on subsequent flights.
- 22.9.7 AOC holders must clearly identify decision points and indicate the correct alternative action or alternative sequence of actions to be taken after each decision point. If the effect of adverse weather requires an alternate action, the AOC holder should design the checklist to account for that alternate action. For example, if the auto throttles are normally engaged for takeoff except when engine anti-ice is being used, the checklist should contain a requirement that the auto throttles cannot be engaged with the engine anti-ice on.

22.10 IMMEDIATE ACTION ITEMS

- 22.10.1 A flight crew's failure to correctly accomplish all immediate action items can result in a threat to continued safe flight. For example, should a flight crew fail to close the fuel valve during an engine fire procedure, leaking fuel in the engine pylon may be ignited. In such cases,

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the first items on the corresponding checklist must be a verification that each immediate action item has been accomplished.

22.10.2 In some cases, an immediate action procedure may not be incorporated in a checklist. For example, there is no point in verifying that each item of an aborted takeoff procedure has been accomplished after the aircraft has been brought to a stop. In most cases, however, there should be a "follow on" or "clean up" checklist to be accomplished after the situation has been brought under control.

22.10.3 Immediate actions may be stated as policies rather than as checklist items when appropriate. An example of an immediate action item that can be stated as a policy rather than as a checklist item is the following statement: "All flight crewmembers shall immediately don O2 masks and report to the captain on interphone in the event of loss of cabin pressure." In this example the loss of cabin pressure checklist would contain subsequent items based on the assumption that the flight crew is on oxygen and has established interphone contact.

22.11 CHECKLIST TERMINOLOGY

22.11.1 The following recommendations should be considered by FOIs when reviewing checklists—

22.11.1.1 The challenges and responses on the checklist should be consistent with the labelling on the switches and controls in the cockpit.

22.11.1.2 Terms such as "tested," "checked," and "set" are acceptable terms only when they are clearly defined and consistently used.

22.11.1.3 AOC holders should have a consistent policy concerning responses to items with variable settings. "As required" is not be an authorised response. A response that gives the actual setting is normally appropriate. For example: ON (or OFF). Items which require variable responses should be carefully evaluated. Such items may not actually be required on the checklist or may be more appropriately included in the system management portion of a checklist.

22.11.1.4 Responses to checklist items concerning liquid or gas quantities should be made in terms of the actual quantities on board compared to the specific quantity required, for example: "10,000 pounds required, 10,400 on board." When specific quantities are required, a response of "checked" is not acceptable. A response of "checked" is acceptable when a range of quantity is permitted and the range is marked on an indicator, such as a green arc on an oil quantity gauge.

22.11.1.5 Excess verbiage on checklists should be discouraged. For example, a checklist item of "Reduce airspeed to 130 KIAS for best glide" can be abbreviated as "BEST GLIDE - 130 KIAS."

22.11.1.6 Ambiguous verbiage on checklists is not acceptable. For example, "takeoff power" can mean either to advance the power or to retard the power.

22.12 AIRCRAFT DIFFERENCES

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22.12.1 FOIs shall ensure that AOC holders account in the aircraft checklists for differences in various series of aircraft or in installed equipment.

22.12.1.1 When there are only a few minor differences, this may be accomplished by using symbols to designate those checklist items that apply to only one series of airplanes or that apply only when the equipment is installed.

22.12.1.2 When there are a significant number of differences, AOC holders should prepare separate checklists for each series of aircraft.

22.12.1.3 Policies and procedures should be established to account for differences in checklist responses when operations are conducted with equipment removed or inoperative, in accordance with MELs and CDLs.

22.13 SEQUENCING NORMAL CHECKLISTS & OTHER CHECKLISTS

22.13.1 Normal checklist items may be incorporated in non-normal or emergency checklists to simplify cockpit management. An acceptable alternative method is to require both the normal and non-normal or emergency checklists to be accomplished in a specified sequence.

22.13.2 This method has the advantage of allowing the normal checklist to be requested and accomplished at the time that it would normally be accomplished.

22.13.3 Checklists should be designed so that two checklists are not in progress simultaneously.

22.13.4 The method may depend on the degree of sophistication of the airplane involved. In technologically advanced aircraft with short, simple checklists, it is usually preferable to keep the normal and the non-normal checklists separate.

22.13.5 Some non-normal checklist actions may be deferred until initiation of the appropriate normal checklist.

22.13.6 In airplanes with electronic checklists, checklists may be combined based on the priority of any one action, and/or the deferred non-normal checklist items may be automatically inserted in the appropriate normal checklist.

22.13.7 In older airplanes, however, it may be necessary to add the normal checklist items to the non-normal or emergency checklist simply to keep the checklist manageable.

22.14 CHECKLIST FORMAT

22.14.1 FOIs shall ensure that AOC holders present checklists to flight crews in a practical and usable format. FOIs should use the following guidance when evaluating aircraft checklists for proper format.

22.14.1.1 Paper checklists should be protected either by plastic lamination or by being printed on heavy, folded pasteboard stock.

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- 22.14.1.2 Non-normal, alternate, and emergency checklists must be in a format that allows crewmembers to quickly and accurately find the correct procedure while the crewmember is under stress.
- a. To expedite the referencing of these checklists, a tabbed manual or other quick reference format is recommended.
 - c. When a paper checklist is required on the airplane, the methods used in an electronic checklist and the associated paper checklist for referencing a particular checklist shall be sufficiently similar to minimize flight crew confusion or inappropriate flight crew response.
 - d. The methods for accessing electronic checklists may determine the format used to reference checklists in the paper version.
- 22.14.1.3 The type size and contrast used on a checklist is a compromise. A large type size is preferred for legibility. A small type size is preferred to keep the number of checklist pages to a minimum, which then further ease the locating of a specific checklist. The legibility of printed material depends on the size of the letters, the spacing between letters, and the type of font used.
- 22.14.1.4 The following is offered as a suggestion to FOIs for what to consider in evaluating the legibility of checklists. This guidance must not be interpreted as being the only acceptable print size and contrast that can be used for checklists:
- a. Checklist headings or titles - 12 point type, all caps, boldface, and a plain (sans serif) font
 - b. Checklist text (challenge and response) and notes - 10 point type, boldface, and a plain (sans serif) font
 - c. Contrast for headings or titles - either black print on white or reversed for emphasis
 - e. Contrast for text - black print on white
 - f. Coloured borders for ease of identification green for normal checklists, yellow for non-normal checklists, and red for emergency checklists



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Chapter 23 - AIRCRAFT PERFORMANCE

23.1 PERFORMANCE DATA COMPUTATION SYSTEMS

23.1.1 A performance data computation system is defined as the system the operator uses to—

- 23.1.1.1 Produce the data required to operate an airplane
- 23.1.1.2 Within the performance limitations
- 23.1.1.3 Specified in the airplane flight manual (AFM) and
- 23.1.1.4 The appropriate regulations

23.1.2 The performance data computation system consists of at least the following components:

- 23.1.2.1 An airport data acquisition, maintenance, and distribution system.
 - 23.1.2.2 Performance data for each variant aircraft the operator operates in a format readily usable by the flight crew.
 - 23.1.2.3 Manual computation procedures or a computer algorithm for converting aircraft performance data from the AFM format to the format used by the flight crew.
- 23.1.3 The majority of this data is available from commercial and government aeronautical charting services.
- 23.1.3.1 Operators of large transport and commuter category airplanes, however, require obstacle data for takeoff computations that are more detailed than those usually supplied by a standard charting service.
 - 23.1.3.2 Operators may contract for obstacle data from commercial sources or may collect the data themselves.

23.2 CURRENT INDUSTRY PRACTICES

- 23.2.1 There are a wide range of methods for: collecting airport and obstacle data; preparing airport analyses; and, for preparing, publishing and distributing the performance data sections of CFM's.
- 23.2.2 To implement each or all of these functions, operators may either establish a department within the company or contract the work out.
- 23.2.2.1 Operators may contract for the collection of airport and obstacle data but produce the airport analysis in-house.
 - 23.2.2.2 Other operators may supply airport data to aircraft manufacturers or other contractors who prepare the airport analysis.
 - 23.2.2.3 Some service contractors provide services tailored specifically to small AOC holders.

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23.3 APPROVAL CRITERIA

23.3.1 Operations inspectors may approve any method of performance data computation and presentation that meets the following criteria:

23.3.1.1 The system must make all of the computations required in the AFM and in the pertinent operating rules.

23.3.1.2 Provisions must be made in the system for all makes, models, and variations of aircraft used by the operator.

23.3.1.3 The system must account for all pertinent variables such as—

- a. Temperature,
- b. Weight,
- c. Thrust,
- d. Runway condition, and
- e. Obstacles.

23.3.1.4 The system must be appropriate to the operator's requirements.

Large, highly-complex airplanes usually require very different systems from those required for small, simple airplanes.

23.3.1.5 The system must be reliable in that identical answers must be generated each time the process is entered with identical parameters.

23.3.1.6 The system must be accurate in that it generates performance data that agrees with AFM data within the degree of accuracy inherent in the original AFM data.

For example, when the AFM data is accurate to + 2%, the operator's system must produce results that do not deviate from the AFM data by more than + 2%.

23.3.1.7 The system should be relatively simple, easy to use, and not error-prone.

23.3.1.8 When simplifying assumptions are made, those assumptions must be clearly and completely stated in the operator's CFM or Ops Manual, Part A as operator-imposed Limitations.

- a. When the assumptions cannot be met, the actions to be taken by the flight crew, flight followers, and dispatchers must be clearly specified.
- b. In such cases, operations must be prohibited or alternate procedures specified.

23.3.1.9 The flight crew procedures for generating, obtaining, and verifying data must be thoroughly described in the procedures section of the CFM.

- a. In the case of the same procedure applying to all airplanes, the flight crew procedures must be described in a section of the Ops Manual, Part A.

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23.4 MANUAL COMPUTATION SYSTEM FROM AFM DATA

23.4.1 Operators may choose to have flight crewmembers, dispatchers, or flight followers conduct manual data computations from the AFM performance section for each takeoff.

23.4.1.1 Equipment is not necessary to establish the manual computation system.

23.4.2 This system is flexible because it can be used for any runway for which the required input parameters can be obtained.

23.4.2.1 The disadvantage of such a system is that computations can be difficult, complex, time consuming, and error-prone.

23.4.3 Flight crewmembers, flight followers, and dispatchers must be carefully and thoroughly trained in such a system.

23.4.4 Flight crews must be supplied with the location of the controlling obstacle for each runway used.

23.4.5 All operator should have a manual computation system for backup in the case of computer failure and for special one-time requirements.

23.5 TABULATED DATA METHOD

23.5.1 AFM data may be combined with airport and runway data and published in tabular format. Typically, the flight crew is provided with a table for each runway and flap setting.

23.5.2 The flight crewmember enters the temperature on the table to determine maximum allowable takeoff weight and then enters the actual weight to determine the V speeds.

23.5.3 Additional corrections are required for factors such as wet or contaminated runways and winds.

23.5.4 PROS & CONS

23.5.4.1 Tabulated data is easier to use, less error-prone and requires less training than is required for AFM data.

23.5.4.2 A properly designed CFM system retains most of the operating flexibility of the AFM system.

23.5.4.3 A disadvantage of the tabulated data system is that crew-members must maintain an up-to-date chart for each runway from which operations are authorised.

23.5.5 ACCURATE GENERATION OF TABLES

23.5.5.1 The operator must be capable of generating performance data tables which retain the degree of accuracy inherent in the AFM data. While this system is widely used for small airplanes, it is impractical for the routine operations of large airplanes because of the

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complexity of the required computations and the high probability of human error. The product of this tabulated data method is usually termed an airport or, more commonly, “runway” analysis. A tabulated data system reduces, but does not eliminate, human error.

- 23.5.5.2 Generally, this must be done manually, by carefully picking data points from a graph, entering the data into a computer, and carefully verifying the generated points.
- 23.5.5.3 Most operators choose to buy a digital data package from the manufacturer (or some other source) from which to generate the required tables.
- 23.5.5.4 Operations inspectors may approve other sources, however, when the operator can adequately establish the accuracy of the data.
- 23.5.5.5 The AOC personnel should be required to run several problems with known correct answers to ensure the quality of the generated tables
- 23.5.5.6 The operator’s system must be capable of performing all of the required computations for each takeoff situation, including the selection of the correct controlling obstacle for each flap setting.
- 23.5.5.7 A means must be available to transmit current charts to the flight crew before they are needed.
- 23.5.5.8 Provisions must be made for temporarily shortened runways.

23.6 SIMPLIFIED DATA METHOD

- 23.6.1 A simplified data system is based on a specified set of assumptions about the conditions under which the aircraft will be operated.
 - 23.6.1.1 For example, take-offs might be limited to runways longer than 5,000 feet and less than 4,000 feet elevation.
- 23.6.2 In this system, the crew is supplied with a simple chart or set of cards which gives the V speeds at specified weight increments.
 - 23.6.2.1 This chart is used on all runways.
- 23.6.3 The operator performs an airport analysis for each airport served and demonstrates that when the aircraft is operated in accordance with the specified set of assumptions, it will perform either equal to, or better than, the performance required in the applicable regulations on all runways the crew is authorised to use.
- 23.6.4 Some of the system’s advantages are—
 - 23.6.4.1 Its relative simplicity,
 - 23.6.4.2 The lack of crew error,
 - 23.6.4.3 The ease of crew training, and

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23.6.4.4 The speed with which the crew can determine V speeds.

23.6.5 Some of the system's disadvantages are—

23.6.5.1 It often imposes severe performance penalties on operators,

23.6.5.2 It is inflexible, and

23.6.5.3 Operations must either be terminated or

23.6.5.4 An alternate system used when the

23.6.5.5 Simplifying assumptions cannot be met.

23.6.6 The system is best suited for operators who serve a limited number of locations regularly and who operate either at large airports, near sea level, or at moderate temperatures. The amount of work required to prepare tabulated data from an AFM often precludes operators from generating their own data packages. Conditions such as construction, part of runway closed, ice, rain, or shortened runways will invalidate the assumptions.

23.7 REAL TIME METHOD

23.7.1 A real time data system is one in which the required computations are made immediately before takeoff for every flight.

23.7.1.1 Usually the data is relayed to the flight crew by radio or through ACARS.

23.7.1.2 The advantages of such a system are that it is extremely flexible, up-to-date, and efficient.

23.7.1.3 Changes in obstacles due to construction, weight, temperature, and runway can be handled immediately. Also, the operator can take maximum advantage of the performance capabilities of the airplane.

23.7.2 Some disadvantages of the system are that—

23.7.2.1 It is expensive,

23.7.2.2 It requires extensive equipment and highly trained personnel to operate, and

23.7.2.3 Adequate backup must be available should the main computer go off-line.

23.8 EVALUATION OF AN OPERATOR'S SYSTEM

23.8.1 Generally, operations inspectors do not have the capability to verify each data point when approving the performance data section of a CFM. The validity and reliability of the computation system itself, however, can be evaluated.

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23.8.2 Operations inspectors shall require the operator to provide an analysis, with documentation, of the following—

- 23.8.2.1 The source of the computer programme
- 23.8.2.2 Assumptions on which the computer programme is based (for example, they must determine if the correct factors are used for each type of aircraft; see section 1)
- 23.8.2.3 Source and accuracy of the databases used
- 23.8.2.4 Operator's capability for handling data
- 23.8.2.5 Results of parallel manual calculations made with AFM data to confirm results

23.8.3 AIRCRAFT PERFORMANCE SPECIFICATIONS ACCURATE?

- 23.8.3.1 The operations inspector should coordinate with the principal maintenance inspector to ensure that the operator's airplanes meet the specifications of the certification regulations.
- 23.8.3.2 Several modifications that require supplemental type certificates may have been required. Unless all of the required modifications have been completed, the airplane may not qualify for the proposed operation.

23.8.4 CONTRACTED SOURCE

- 23.8.4.1 When the operator contracts for data or computation, the operator is responsible for the validity of the results.
- 23.8.4.2 A operations inspector may find that the contractor has been previously evaluated and approved for another operator.
- 23.8.4.3 If the contractor's capabilities and qualifications have not been previously established, the operations inspector shall require the operator to fully substantiate the contractor's qualifications before granting approval to the operator system

23.8.5 RELIABLE SOURCE

- 23.8.5.1 Operators should procure computer programmes from a reliable source.
 - a. The computer programmers should be qualified in both education and experience.
 - b. The validity of the computer programme should be validated by aeronautical engineers and computer specialists.
 - c. For real time systems, the operator's method of obtaining data for a specific flight and for transmitting that data to and from the individual performing the calculations must be shown to be accurate and timely.

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23.9 VERIFICATION

23.9.1 The operations inspector or an aircraft-specific qualified inspector should review the verification process conducted by the operator.

23.9.1.1 Several runways at different airports should be selected for verification with the AFM data.

23.9.1.2 Short runways with obstacles should be checked by manual calculation, particularly at airports with higher temperatures and elevations.

23.9.1.3 The operator should be able to identify all of the obstacles evaluated by the computer and the one selected as the limiting obstacle in each case.

23.9.1.4 The operations inspector must be aware that under different temperature and weight conditions, a different flap setting may be required, and different obstacles may be controlling.

23.9.1.5 The inspector should ensure that the operator has verified the limiting obstacle under various conditions and flap settings.



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Chapter 24 - MINIMUM EQUIPMENT LISTS

24.1 BACKGROUND

- 24.1.1 MEL procedures were developed to allow the continued operation of an aircraft with specific items of equipment inoperative under certain circumstances. The aviation industry, in concert with the civil aviation authorities, have found that for particular situations, an acceptable level of safety can be maintained with specific items of equipment inoperative for a limited period of time, until repairs can be made.
- 24.1.2 The MEL document describes the limitations that apply when an operator wishes to conduct operations when certain items of equipment are inoperative.

24.2 FOI RESPONSIBILITIES

- 24.2.1 The Flight operations inspector (FOI) is the primary CAASL-FS official responsible for the overall process of administering, evaluating, and approving an operator's MEL.
- 24.2.2 It is essential that the FOI work with the Air Worthiness inspector (CAI AW), and other individuals or groups involved in this process.
- 24.2.3 Should the FOI require additional TECHNICAL information related to a specific MEL ITEM, he or she should consult the State of Manufacture or Design.

24.3 DEFINITIONS

- 24.3.1 The following definitions are used throughout this chapter—

- 24.3.1.1 **Airplane Flight Manual (AFM) and Rotorcraft Flight Manual (RFM).** The approved flight manual is the document approved by the responsible aircraft certification office (ACO) during type certification. The approved flight manual for the specific aircraft is listed on the applicable type certificate data sheet. The approved flight manual is the source document for operational limitations and performance parameters for an aircraft. The term, approved flight manual, can apply to either an AFM or an RFM. The CAASL-FS requires an approved flight manual for aircraft type certification.
- 24.3.1.2 **Aircraft Maintenance Manual (AMM).** The AMM is the source document for aircraft maintenance procedures. The term AMM can apply to either an airplane or a rotorcraft manual. The CAASL-FS requires an AMM for aircraft certification.
- 24.3.1.3 **Air Transport Association of America (ATA) Specification 100.** ATA Specification 100, Manufacturer's Technical Data, is an international industry numbering standard developed to identify systems and components on different aircraft in the same format and manner.
- 24.3.1.4 **Configuration Deviation List (CDL).** Aircraft may be approved for operations with missing secondary airframe and engine parts. The aircraft source document for such operations is the CDL. The ACO grants approval of the CDL under an amendment to the type certificate.

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For U.S. certificated aircraft, the CDL is incorporated into the limitations section of the approved flight manual as an appendix.

- 24.3.1.5 **Flight Operations Evaluation Board (FOEB).** An FOEB is a State of Manufacture board of personnel assigned for each type of aircraft. The FOEB is composed of inspector personnel who are operations, avionics, airworthiness, and aircraft certification specialists. The FOEB develops an MMEL for a particular aircraft type.
- 24.3.1.6 **Flight Operations Policy Board (FOPB).** The FOPB develops FOEB and flight standardization board (FSB) policy recommendations, which are approved by the State of Manufacture.
- 24.3.1.7 **Inoperative.** Inoperative means that a system or component has malfunctioned to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limits or tolerances.
- 24.3.1.8 **Master Minimum Equipment List (MMEL).** The MMEL is a list of equipment that the CAASL-FS has determined may be inoperative under certain operational conditions and still provide an acceptable level of safety. The MMEL contains the conditions, limitations and procedures required for operating the aircraft with these items inoperative. The MMEL is used as a starting point in the development and review of an individual operator's MEL.
- 24.3.1.9 **Minimum Equipment List (MEL).** The MEL is derived from the MMEL and is applicable to an individual operator. The operator's MEL takes into consideration the operator's particular aircraft configuration, operational procedures and conditions. When approved and authorised for use, the MEL permits operation of the aircraft under specified conditions with certain inoperative equipment.
- 24.3.1.10 **Proposed Master Minimum Equipment List (PMMEL).** The PMMEL is a list developed by the manufacturer or operator that is submitted to the FOEB State of the Manufacture as a basis for the development of an MMEL.

24.4 PURPOSE OF MEL

- 24.4.1 Regulations permits the authorization of an MEL if the CAASL-FS finds that compliance with all the aircraft equipment requirements is not necessary in the interest of safety for a particular operation.
- 24.4.2 Through the use of appropriate conditions or limitations, the MEL provides for improved scheduled reliability and aircraft utilization with an equivalent level of safety.
- 24.4.3 This process is possible because of the installation of additional and redundant instruments, equipment and/or systems in present transport aircraft.
- 24.4.4 Without an approved MEL, inoperative equipment would ground the airplane until repair or replacement of the non-functioning equipment.



24.4.5 An MEL is approved for a specific make and model of aircraft, and the use of it is authorised by its operations specifications (Ops Specs).

24.5 ITEMS LISTED ON THE MEL

24.5.1 There are three categories of items that may be contained in the operator's MEL—

24.5.1.1 MMEL items

24.5.1.2 Passenger convenience items

24.5.1.3 Administrative control items

24.5.2 **MMEL Items.** The MEL will list all of the items for which the operator seeks relief and that are appropriate for its operation. The operator, by not listing at its discretion certain items in its MEL, may be more restrictive than permitted by the MMEL.

24.5.3 **Passenger Convenience Items.** The passenger convenience items, as contained in the operator's approved MEL, are those related to passenger convenience, comfort, or entertainment, such as, but not limited to, galley equipment, movie equipment, in-flight phones, ashtrays, stereo equipment, and overhead reading lamps. It is incumbent on the operator and the FOI to develop procedures to ensure that those inoperative passenger convenience items are not used. Passenger convenience items do not have fixed repair intervals. Items addressed elsewhere in the MMEL shall not be authorised relief as a passenger convenience item. "M" and "O" procedures may be required and should be developed by the operator, approved by the FOI, and included in the air carrier's appropriate document.

24.5.4 **Administrative Control Items.** An operator may use an MEL as a comprehensive document to control items for administrative purposes.

24.5.5 In such cases, the operator's MEL may include items not listed in the MMEL; however, relief may not be granted for these items unless conditions and limitations are contained in approved documents other than the MMEL or meet the regulatory requirements.

24.5.6 Examples of items considered to be administrative control items would be cockpit procedure cards, medical kits, delaminated windshields, and life vests.

24.6 TIMELY REPAIR OF ITEMS THAT ARE INOPERATIVE

24.6.1 The MEL is intended to permit the operation of an aircraft with certain inoperative items for a limited period of time until repairs can be accomplished. The operator is responsible for establishing a controlled and effective repair programme.

24.6.1.1 **Repair Interval.** Operators must make repairs within the time period specified by the MEL. Although the MEL might permit multiple days of operation with certain inoperative equipment, operators must repair the affected item as soon as possible.

24.6.1.2 **Day of Discovery.** The day of discovery is the calendar day an equipment malfunction was recorded in the aircraft maintenance log or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment.

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This provision is applicable to all MMEL items, such as categories "A," "B," "C," and "D." The operator and the FOI must establish a reference time in which the calendar day or flight day begins and ends 24 hours later. This reference time is established to ensure compliance with timely repair of equipment and items.

24.6.1.3 MMEL Definitions. More than one set of MMEL definitions exist due to years of evolving changes during which not all MMELs have been updated to the latest revision of the definitions. However, only one set of definitions may be used with a specific MMEL. Only certain portions of the latest definitions may be appropriate for a specific air carrier's MEL. Definitions found in global changes, such as administrative control and repair intervals, may be adopted by the operator.

24.6.1.4 Continuing Authorizations. Approval of an MEL authorizes an operator to use a continuing authorization to approve extensions to the maximum repair interval for category "B" and "C" items, provided the CAASL-FS is notified within 24 hours of the operator's exercise of extension authority.

24.6.2 The certificate holder is not authorised to extend the maximum repair time for category "A" and "D" items, as specified in the approved MEL.

24.6.3 Misuse of the continuing authorization may result in an amendment of the operator's Ops Specs by removing the operator's authority to use an MEL.

24.7 GENERAL MEL POLICY

24.7.1 RECORD KEEPING

24.7.1.1 When an item of equipment becomes inoperative, the operator must report it by making an entry in the aircraft maintenance record, as prescribed by regulations.

24.7.2 MULTIPLE ITEMS THAT ARE INOPERATIVE

24.7.2.1 Individual MEL requirements are designed to provide coverage for single failures en-route. When operating with multiple inoperative items, the operator should consider the interrelationships between those items and the effect on aircraft operation and crew workload, including consideration of a single additional failure occurring en-route.

24.7.3 FLEET APPROVAL

24.7.3.1 An operator who has a single MEL for multiple aircraft may reflect equipment in its MEL that is not installed on all aircraft in its fleet. In this case, the item's title in the operator's MEL need not reference any specific airplane identification (usually registration number) unless the operator determines that there is need to do so.

24.7.4 ACCESS TO MEL

24.7.4.1 IS 013 and IS 015 requires that the MEL be carried aboard the aircraft or that the flight crew have direct access to the MEL information prior to flight. Other means of direct access require approval.

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24.7.5 CONFLICT WITH OTHER CAASL-FS APPROVED DOCUMENTS

- 24.7.5.1 The MEL may not conflict with other CAASL-FS approved documents such as the approved flight manual (AFM) limitations and airworthiness directives (AD). The operator's MEL may be more restrictive than the MMEL, but under no circumstances may the operator's MEL be less restrictive.

24.8 MEL APPROVAL PROCESS

24.8.1 GENERAL

- 24.8.1.1 This section contains specific direction, guidance, and procedures to be used by aviation safety inspectors (ASI) when evaluating and approving MELs.
- 24.8.1.2 The operator's MEL is developed by the operator from the appropriate master minimum equipment list (MMEL), and then approved by the CAASL-FS. The CAASL-FS approval process for an MEL follows the general process for AOC certification. This section contains an expansion of the CAASL-FS approval process for the MEL.

24.8.2 MEL ACCEPTABILITY

- 24.8.2.1 The general criteria for MEL acceptability are as follows—
- 24.8.2.2 **Equally or More Restrictive.** The operator's MEL must not be less restrictive than the MMEL, the ANR Parts, the operations specifications (Ops.Specs), the approved flight manual limitations, certification maintenance procedures, or airworthiness directives (AD).
- 24.8.2.3 **Appropriate.** The MEL must be appropriate to the individual aircraft make and model.
- 24.8.2.4 **Specific.** The operator's operations ("O") and maintenance ("M") procedures must be specific to the aircraft and the operations conducted.
- 24.8.2.5 **Applicability.** An MEL should be applicable for the regulatory requirements.

24.8.3 INITIAL PHASE OF MEL APPROVAL

- 24.8.3.1 In this phase of the MEL approval process, the operator should consult with the principal operations inspector (FOI) regarding requirements for either developing an MEL or for revising an existing MEL.
- 24.8.3.2 The FOI should consult with and seek the participation of the principal maintenance inspector (PM I) and the principal avionics inspector (PAI) during the entire approval process.
- 24.8.3.3 During the review of the "O" and "M" procedures, the FOI, PMI, and PAI may consult with the State of Manufacture or the manufacturer as necessary concerning specific procedures.



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- 24.8.3.4 Operator Familiarization. In phase one of the MEL approval process, the FOI should determine the scope of the task, based on the operator's experience with MELs. FOIs should adapt the discussion to fit the operator's needs and experience, and should provide advice and guidance to the operator as necessary. FOIs must ensure that the operator clearly understands that MEL document preparation is solely the operator's responsibility.
- 24.8.3.5 Required Document Submittal. FOIs should advise the operator that, for an MEL to be approved, the following documents must be submitted—
- The proposed MEL or MEL changes
 - Necessary "O" and "M" procedures, which may be based on the aircraft manufacturers recommended procedures, Supplemental Type
 - Certificate (STC) modifier's procedures, or equivalent operator procedures
 - A description of the MEL management programme and its procedures as required by paragraph D95 of the Ops Specs, unless an MEL management programme is already in place
 - Any required guidance material developed by the operator, such as training material, guidance, and deferral procedures for both maintenance and operations personnel
- 24.8.3.6 When a manufacturer's recommended procedures exist, operators may use them or may develop alternate procedures.
- 24.8.3.7 When contract services are used to develop the operator's MEL along with acceptable "O" and "M" procedures, the principal inspectors should review the "O" and "M" procedures in light of the type of operations being conducted and should ensure the acceptability of the procedures.
- 24.8.3.8 The principal inspectors should ensure that the developed MEL procedures can be adequately implemented by the operator.
- 24.8.3.9 Materials Provided to the Operator. It is the operator's responsibility to obtain and provide to the CAASL-FS a hard copy of the MMEL document and appropriate guidance material (as a last resort)
- 24.8.3.10 Document Form. The operator may submit MEL draft documents to the CAASL-FS either on hard copy (printed on paper) or on computer disk, as mutually agreed upon between the operator and the FOI. The operator and the FOI should discuss the techniques that will be used for revising and editing the proposed document. It is important that the operator understand that when the process is complete, the final proposed MEL must be submitted on paper.
- 24.8.3.11 MEL Format. The MMEL format has been standardized to facilitate the development, revision, and approval of both master and operator documents. While the master document contains eight total sections, six of these sections are considered basic for MEL development and should be included in each operator's MEL.
- 24.8.3.12 Generic Single Engine MMELs. A generic MMEL for single engine aircraft was developed and published by the United States FAA. This MMEL is applicable to all single engine airplanes and helicopters for which a specific MMEL has not been issued. When an

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operator is approved to use this generic MMEL, and a specific MMEL for the individual aircraft type is subsequently issued, the operator's MEL must be revised within the specified time frame to conform to the specific MMEL.

24.8.4 FINAL PHASE OF MEL APPROVAL PROCESS

24.8.4.1 The final phase begins when the operator formally submits the proposed MEL or MEL changes to the FOI. The FOI should initially review the operator's submittal to verify that it is complete, contains the required elements and is detailed enough to permit a thorough evaluation of the MEL.

24.8.4.2 Unacceptable Submittal. If the FOI finds the proposed MEL package to be incomplete or unacceptable at this time or at any other juncture in the approval process, the FOI should contact the operator. If a mutually acceptable correction cannot be immediately agreed upon, the entire package must be immediately returned to the operator, or its representative, along with an explanation of the problems found within the documents.

24.8.4.3 Acceptable Submittal. If the FOI finds the proposed MEL package to be complete and to contain the required information in an acceptable format, the detailed analysis begins.

24.8.4.4 During this analysis, the FOI should coordinate with the PMI and the PAI to perform a detailed examination of the proposed MEL document and other supporting documents and procedures.

24.8.4.5 If the operator does not currently have an MEL programme, its MEL management programme must also be reviewed for acceptability. Inspectors should examine the technical content and quality of the proposed MEL document and other supporting documents and procedures as follows.

- a. Timely Review. FOIs should promptly address all deficiencies and notify the operator of any discrepancies or outstanding issues. The FOI and the operator may informally coordinate by telephone to clarify minor discrepancies or misunderstandings.
- b. Reference Material. Inspectors should use the MMEL as the primary reference document when reviewing and approving the MEL. In addition, inspectors should use the following references—
 - Related Regulations
 - Appropriate advisory circulars (AC)
 - Approved flight manual
 - Operator's Ops Specs
 - Operator's manuals
 - MMEL policy letters
- c. Coordination with Technical Groups. During this phase, the FOI may wish to coordinate with the appropriate aircraft evaluation group (AEG) for guidance.
- d. Document Deficiencies.



- e. Change in Schedule. If certain MMEL items must be addressed within a specific time frame, the FOI should notify the operator of this requirement as soon as possible. If the operator is unable to meet these schedule requirements, the FOI should negotiate a new schedule with the operator.

24.9 MEL EVALUATION

24.9.1 Inspectors should compare the operator's MEL changes against the corresponding items in the current MMEL for the specific aircraft type. In addition, inspectors should verify that the operator's MEL contains the following required items—

24.9.1.1 Cover Page (Optional). The MEL cover page contains the operator's name and the make and model of the aircraft to which the MEL applies.

24.9.1.2 Table of Contents (Required). The table of contents contains a list of all of the pages in the MEL by title and the corresponding page identification (usually a page number).

24.9.1.3 Log of Revisions (Required). The log contains the revision identification (usually a number) and date of the revision. It may also contain a list of the revised pages, a block for the initials of the person posting the change, and additional enhancements for use by the operator.

24.9.1.4 Preamble and Definitions (Required). The standard MMEL preamble and definitions section must be reproduced word for word in each MEL, without modification.

24.9.1.5 Control Page (Required). The control page is used as a method for keeping track of the status of the MEL and includes a record of the revision status or the date of each page of the operator's MEL. It may also be used as a means of conveying CAASL-FS approval of the MEL.

24.9.2 MINIMUM CONTENTS

24.9.2.1 At a minimum, the control page must contain the following—

- a. The operator's name
- b. A listing of all of the pages in the MEL (including the date of each page and its page number or revision number)
- c. The MMEL revision number on which the MEL is based
- d. A signature block containing space for signature of the DOT (only if this page is used as a means of conveying CAASL-FS approval of the MEL)
- e. Optional Contents. The operator may include additional information on the control page to provide flexibility and additional approval functions.
- f. Highlights of Change Page (Optional). This page contains a synopsis of the changes made by the operator in each revision.
- g. Additional Items. The operator may include additional information sections in excess of the six CAASL-FS sections.



24.9.3 INDIVIDUAL ATA SYSTEM PAGE EVALUATION

- 24.9.3.1 These pages contain a list of individual items of equipment in the aircraft together with provisions for the operation of the aircraft when the items are inoperative.
- 24.9.3.2 The reviewing inspector should examine the individual ATA system pages, ensuring that the MEL is at least as restrictive as the MMEL and that operator's procedures are adequate and appropriate.
- 24.9.3.3 The inspector should also examine the material contained on these pages for conflict with the regulatory requirements, with the approved flight manual emergency procedures and limitations, and with the operator's Ops Specs. The following elements are included:
- 24.9.3.4 **The ATA Numbering System.** Operators should use the standard ATA numbering system, similar to the manner used in the MMEL, for numbering individual pages in this section. An example of this numbering system would be the communications page; the first page would be 23-1; the second page would be 23-2.

24.9.4 INDIVIDUAL ITEMS OF EQUIPMENT

- 24.9.4.1 The MMEL contains listed items of installed equipment that may be inoperative.
- a. **MMEL Items not listed on the Operator's MEL.** If items listed on the MMEL are not listed on the MEL there is no relief.
- b. **MMEL Items Listed on the Operator's MEL.** Each piece of equipment that is installed on the aircraft and that is contained in the MMEL, for which the operator seeks relief and that is appropriate for its operation, should be listed on the appropriate page of the operator's MEL within the associated ATA system. The operator may be more restrictive than permitted by the MMEL by not listing certain items in its MEL.
- 24.9.4.2 Each item title on the operator's MEL will generally be entered exactly as it is shown on the MMEL. Exceptions include the following—
- a. When the MMEL uses a generic term to address equipment that serves a similar function but various operators use different names for that equipment; or
- b. When the MMEL lists functions rather than individual pieces of equipment within that category (Examples include "Navigation Equipment" or "Communications Equipment." In such cases, the MEL must contain a list of the individual equipment or systems within that category that are actually installed on the aircraft, such as "VHF Communications Transceivers."

When items of this type consist of several components of a system, the item may be listed as a complete system, such as "VOR Navigation System," consisting of a VOR navigation receiver and its associated indicator. The inspector should ensure that the operator has not listed inappropriate items or items that are listed individually elsewhere in the MMEL. However, the FOI is authorised to approve generic MMEL relief for navigation or communication equipment that is appropriate such as ILS, VOR, VHF, HF and GPS.)

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24.9.4.3 **Items Listed on the MMEL but not Installed on the Operator's Aircraft**

The FOI may follow several acceptable methods of dealing with an item of equipment being listed on the MMEL but not installed on the operator's aircraft. One method is to simply omit the item from the MEL altogether, renumbering individual items within an ATA category as necessary to provide proper continuity. (It should be noted that individual item numbers on a page are not necessarily ATA code numbers, but are simply sequential item numbers within an ATA category.)

Another method is to list the item as shown on the MMEL, and to show the Number Installed as zero. In this case, the "Number Required for Dispatch" would also be zero, and the remark "Not Installed" may be noted under "Remarks and Exceptions"; repair category designators should be omitted.

24.9.4.4 **Triple Asterisk Symbol (***)**

The triple asterisk symbol is used in an MMEL to indicate that an item is not installed on some models of the aircraft. Operators should not produce or use this symbol in the MEL.

24.9.4.5 **Repair Category**

Each item of equipment listed in the operator's MEL, except for Administrative Control Items and Passenger Convenience Items, must include the repair category designator for that item as shown on the MMEL. These designators, categorized as "A," "B," "C," or "D," indicate the maximum time that an item may remain inoperative before repair is made. The actual repair categories corresponding to these letters are provided in the "Notes and Definitions" section of the MMEL. The operator may choose to adopt a more restrictive repair category than the one shown on the MMEL, but may not relax the requirement. Components or subsystems of items categorized in the MMEL, such as items of communications or navigation equipment that are not listed individually in the MMEL, must retain the repair category shown on the MMEL when listed as separate items on the MEL.

24.9.4.6 **Passenger Convenience Items**

- a. Passenger convenience items relate to the convenience, comfort, and entertainment of passengers and must never affect the airworthiness of the aircraft. These items do not carry a specific repair category; however, the operator should make repairs to convenience items within a reasonable time frame.
- b. Normally, the operator lists these items individually in ATA chapters 25 and 38. Passenger convenience items may be included elsewhere in the MEL if clearly identified as passenger convenience items.
- c. FOIs should review the proposed MEL to decide which passenger convenience items are components of an item appearing in the MMEL. When listing passenger convenience items on the MEL, the operator must list each item for which the operator wishes relief. The operator may make a list of passenger convenience items that, once it is acceptable to the FOI, is held at the CAASL-FS office. Passenger convenience items also apply to cargo airplanes, as appropriate.



24.9.4.7 Administrative Control Items

- a. "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL by approval of the FOI, provided no relief is granted, or provided conditions and limitations are contained in an approved document (such as Structural Repair Manual or airworthiness directive (AD)).
- b. If relief other than that granted by an approved document is sought for an administrative control item, the operator must submit a request to the Manager.
- c. If the request results in review and approval by the State of the Manufacturer, the item becomes an MMEL item rather than an administrative control item.
 - Examples of items that could be considered administrative control items are cockpit procedure cards, medical kits, and life vests. These items should appear in the appropriate ATA chapter and would not have a repair category.
- d. When the operator chooses this course of action, the FOI must examine each proposed administrative control item on the operator's proposed MEL to ensure that the following conditions are met—
 - No item is included as an administrative control item if it is included elsewhere in the MMEL
 - Administrative items are not included as a subsystem of items listed in the MMEL
 - Administrative items are not granted relief in the MEL unless the release conditions or limitations are contained in another approved document

24.9.4.8 Number of Items Installed

- a. The MEL will normally contain the actual number of items of particular equipment installed on the aircraft. This number may be either greater or less than the number shown on the MMEL.
 - The MMEL shows the number of items installed as the number of those items normally installed on a particular aircraft type. Individual aircraft operated by an operator may have a different number of items.
 - Frequently the MMEL shows a dash in the "Number Installed" column. This dash indicates that a variable quantity of these items are generally installed on the aircraft.
 - If the operator has an MEL for a single aircraft or identical aircraft, the actual number of these items on the particular aircraft must be listed in the MEL.
 - If the operator has an MEL for multiple aircraft, and the equipment is not installed on all aircraft or there is a variable quantity between aircraft, the operator's MEL will not reference specific aircraft identifications; the "Number Installed" column may contain a dash.



24.9.4.9 Number of Items Required for Dispatch

- a. Normally, the number of items required for dispatch is determined by the State of the Manufacturer and may be modified in the MEL in only two cases:
- b. When the item is not installed on the aircraft, in which case a zero may be shown as the number required for dispatch When the item is shown in the MMEL as being a variable number required for dispatch
- c. In some cases, it is determined by a reference to specific requirements listed in the "Remarks or Exceptions" column of the MMEL.
- d. An example would be cabin lights. In this case, the MMEL may show a variable number installed while the "Remarks or Exceptions" column might state that 50 percent of those items be operable. The number required for dispatch would therefore be 50 percent of the number of lights determined to be actually installed on the individual aircraft.
- e. Another case where the MMEL may show a variable number required for dispatch is when the "Remarks or Exceptions" column of the MMEL contains the statement, "As required by FAR." In this case, the number is the minimum quantity of these items that must be installed for operations under the least restrictive regulation under which the operator conducts operations. For example, regulations have differing requirements for when two communications transmitters are necessary for instrument flight rules (IFR). Sometimes only one transmitter is required and none are required for visual flight rules (VFR) operations when operating outside of controlled airspace. If none are required, the minimum number of transmitters required for dispatch could be zero.
- f. "Remarks or Exceptions." Certain items demand specific relief developed by the operator as authorised through Ops Specs, area of operation and applicable regulations "As required by FAR (USA-FAA)" is an example of this type of relief Other Items.

Other items in which relief has been specifically written to reflect actions or restrictions to the operation may be changed only when the State of Manufacture makes a change to the MMEL. Generally they contain "O" and "M" procedures in which the operator develops its company procedures to comply with the MEL.

24.10 EVALUATION OF ASSOCIATED DOCUMENTATION

- 24.10.1 The inspector should evaluate the supporting documentation submitted by the operator to ensure that it is complete and appropriate.

24.10.2 THE OPERATOR'S MANUAL

- 24.10.2.1 Inspectors should evaluate the operator's manual to ensure that it contains adequate guidance for the operator's personnel in conducting operations using the MEL.
- 24.10.2.2 Generally, if the operator does not presently have an MEL programme, the applicable portions of its manual and other guidance material should be submitted at the time the MEL is submitted for initial review.



24.10.2.3 When evaluating the operator's manual, inspectors should use the following guidance:

24.10.2.4 **Documentation Procedures**

- a. The procedures for documenting inoperative equipment and any required maintenance release procedures should be clear. At a minimum, provisions for recording the following items should be developed—
- An identification of the item of equipment involved
 - A description of the nature of the malfunction
 - An identification of the person making the entry
 - The MEL item number for the equipment involved

24.10.2.5 **Crew Notification**

- a. The operator should establish procedures for advising the pilot in command (PIC) of inoperative items and required procedures such as affixing placards, alternate operating procedures, and instructions for the isolation of malfunctions.
- b. The PIC and the operator are both responsible for ensuring that flights are not dispatched or released until all of the requirements of the "O" procedures and "M" procedures have been met.

24.10.2.6 **Flight Restrictions**

- a. The operator should establish procedures to ensure that dispatch or other operational control personnel, as well as the flight crew, are notified of any flight restrictions required when operating with an item of equipment that is inoperative.
- b. These restrictions may involve maximum altitudes, limitations for the use of ground facilities, weight limitations, or a number of other factors.

24.10.2.7 **Training Programme Material**

Inspectors should ensure that the operator's flight and ground personnel training programmes contain adequate instruction for MEL use.

24.10.2.8 **MEL Management Programme**

- a. The FOI should coordinate closely with both the PMI and the operator on the MEL management programme.
- b. Operators must develop an MEL management programme as a comprehensive means of controlling the repair of items listed in the approved MEL.
- c. Operators must include a description of the programme in their maintenance manual or other documents.
- d. The MEL management plan must include the following:

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- A method for tracking the date and time of deferral and repair
- The procedures for controlling extensions to maximum repair categories
- A plan for coordinating parts, maintenance, personnel, and aircraft at a specific time and place for repair
- A review of items deferred due to unavailability of parts
- The specific duties and responsibilities of the managers of the MEL management programme, listed by job title

24.10.3 **TERMS AND CONDITIONS OF RELIEF**

24.10.3.1 This section contains the terms and conditions of relief granted to an operator for operating the aircraft with items of installed equipment that are inoperative.

24.10.3.2 The operator must state the terms and conditions under which operations may be conducted with inoperative items for the operator's particular organization and aircraft.

24.10.3.3 The reviewing inspector must address the following elements of this section:

24.10.4 **STANDARD PHRASEOLOGY**

24.10.4.1 When reviewing the MEL, inspectors should ensure that the operator generally uses the phraseology used in the MMEL to ensure clarity and standardization. In some cases modified phraseology is appropriate for the operator's specific installation.

24.10.5 **"AS REQUIRED BY FAR"**

24.10.5.1 The general term, "As Required by FAR," that appears in MMELs issued for aircraft certificated in the United States will be found in ATA chapters 23 (Communications), 31 (Instruments), 33 (Lights), and 34 (Navigation Equipment).

- a. When this term appears in the "Remarks or Exceptions" section of an MMEL, the operator's MEL must contain the specific conditions that apply.
- b. The operator usually must research the applicable regulations in detail to develop the appropriate provisions that apply to that operator's particular operations.
- c. An example of a typical distance measuring equipment (DME) remark could read, "Not required for flights below FL 240."

24.10.6 **"O" AND "M" PROCEDURES.**

24.10.6.1 "O" and "M" procedures must contain descriptions of the individual steps necessary to accomplish each process. For example, if the MMEL contains an "M" symbol with a provision that a valve must be closed, the operator must include the appropriate procedures to close the valve as part of the operator's manual or MEL. The reviewing inspector must ensure that the procedure addresses the following—

- a. How the procedure is accomplished
- b. The order of accomplishing the elements of the procedure
- c. The actions necessary to complete the procedure

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24.10.6.2 For example, if the MMEL contains an "M" symbol with a provision that a valve must be closed, the operator must include detailed steps and actions for closing and testing the valve and installing the placard.

- a. The actual written procedures may be contained within the "Remarks or Exceptions" section of the MEL, in separate documents, or attached as an appendix.
- b. Inspectors should consult the Guidelines for "O" and "M" Procedures of the MMEL when evaluating these procedures.
- c. The section about the Guidelines for "O" and "M" Procedures does not have to be contained within the operator's MEL.
- d. If the "O" and "M" procedures are not contained within the MEL, the MEL should include a reference to the location of the procedures.

24.10.7 "O" PROCEDURES

24.10.7.1 The "(O)" symbol indicates a requirement for a specific operations procedure that must be accomplished in planning for and/or operating with the listed item inoperative. Normally, these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorised to perform certain functions.

24.10.7.2 The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.

24.10.8 "M" PROCEDURES

24.10.8.1 The "(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorised to perform certain functions.

24.10.8.2 Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment should be accomplished by maintenance personnel.

24.10.8.3 The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

24.10.9 PROVISOS

24.10.9.1 The "Remarks and Exceptions" section of the MMEL generally contains provisos that include specific conditions under which an item of equipment may be inoperative.

24.10.9.2 These provisos must be carried over either verbatim into the operator's MEL or by using equivalent terminology.

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24.10.9.3 Provisos are distinct from "O" and "M" procedures. A procedure is an action that must be performed. A proviso is a condition that must exist.

- a. For a proviso that operations must be conducted under VFR, an operation under an IFR flight plan is not permitted, regardless of the weather conditions. When reference is made to visual meteorological conditions (VMC), operations may be conducted under an IFR flight plan, but only in VMC.

24.10.10 DEMONSTRATION PHASE

24.10.10.1 Demonstration phase is normally not required for an MEL approval. When an operator is developing an MEL in conjunction with original certification for initial issuance of an operating certificate, or when instituting service with a new aircraft type, a demonstration of the operator's ability to use an MEL may be conducted during any required aircraft proving tests.

24.10.11 FOI APPROVAL OF THE OPERATOR'S MEL

20.10.11.1 After the FOI is satisfied that the MEL is in full compliance with all applicable requirements, the FOI shall sign the MEL control page or stamp the individual MEL pages to signify approval.

24.10.11.2 If the operator has not previously been authorised to operate under an MEL, the AWEI should issue paragraph D95 of the Ops Specs concurrently.

24.10.11.3 The FOI may send a letter of approval if desired.

24.11 MEL USE IN SERVICE

24.11.1 This section contains specific direction, guidance, and procedures for aviation safety inspectors (ASI) on the revision, administration, and policy application for administering MELs that have been approved for use by air carriers operating under the provisions of IS 013 and IS 015.

24.11.2 REVISIONS TO AN MEL

24.11.2.1 Revisions to an operator's MEL may be initiated by either the operator or the CAASL-FS. See Appendix 24-C for an example of the letter of approval.

24.11.2.2 Operator initiated revisions may be equal to or more restrictive than the Master Minimum Equipment List (MMEL).

24.11.2.3 It is not necessary for an operator to submit an entire MEL when requesting the approval of a revision.

24.11.2.4 The minimum submission would consist of only the affected pages; the approval by the principal operations inspector (FOI) may only consist of specific items.

24.11.2.5 These items are approved within a controlled process, and the carrier will produce the final MEL document.

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24.11.2.6 If the revision results in individual pages either being added or deleted, a revised table of contents page is also required.

24.11.2.7 The issuance of an airworthiness directive (AD) will not be the basis for change to an operator's MEL. Instead, ADs will be referred to the State of Manufacture for appropriate changes to the MMEL.

24.11.3 **MEL REVISION INITIATED BY AN OPERATOR**

24.11.3.1 An operator initiated MEL revision will normally fit into one of the following three categories—

a. Items Not Requiring an MMEL Change. Operators may propose changes to an MEL that are equal to, or more restrictive than, the MMEL. These revisions are approved by the FOI using the same procedures as those required for an original MEL approval.

24.11.3.2 Items Requiring an MMEL Change. Operators may request changes to an MEL that are less restrictive than the MMEL. However, the MEL cannot be revised until the MMEL has been revised to permit the proposed MEL change. The most common instance of a revision request of this type occurs when an operator installs additional equipment on an aircraft and provisions for that equipment are not included on the current MMEL.

24.11.3.3 Major Aircraft Modifications. Major aircraft modifications, such as a supplemental type certificate (STC), a major alteration (FS Form, "Major Repair and Alteration") or a type certificate (TC) amendment may invalidate the MEL for that aircraft. Operators should review the MEL to assess the impact of any planned modification and should immediately notify the FOI of these modifications and the impact on the MEL.

24.11.4 **MEL REVISIONS INITIATED BY THE CAASL-FS**

24.11.4.1 **Non-Mandatory Revision**

a. MMEL revisions that only provide additional relief are reflected by a lower case letter suffix following the MMEL numeric revision number. For example, MMEL Revision No. 8 would become Non-mandatory Revision No. 8a. Any MMEL changes that are less restrictive than the operator's MEL may be ignored by the operator.

b. An example of a non-mandatory revision is when the MMEL has been revised to provide for optional equipment normally not installed on all aircraft of a particular type, such as logo lights. Operators that operate aircraft with logo lights may choose to revise the MELs, while operators operating without logo lights would not.

24.11.4.2 **Global Change**

a. A global change is another type of non-mandatory revision. A global change generally applies to items of equipment that are required to be installed by a new regulatory requirement, such as a cockpit voice recorder (CVR), or a traffic alert and collision avoidance system (TCAS).

b. Items affected by CAASL-FS policy decisions, such as Observer Seat Notice are also global changes.



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- c. The global change does not replace the normal MMEL revision process. When a standard revision to an MMEL is issued, it will include all global changes issued to date.
- d. However, since the process for revising the MMEL can be lengthy, and the operator's MEL must be based on the MMEL, a global change will allow an operator to revise its MEL prior to the change in the MMEL.
- e. The FOI has the authority to approve the operator's MEL revision on the basis that the global change is an approved addendum to the existing MMEL.

24.11.4.3 **Mandatory Revisions**

- a. Mandatory changes, which are more restrictive and may remove relief from the current MMEL, are reflected by the next successive change to the basic MMEL revision number itself.
 - For example, the next mandatory revision following the non-mandatory revisions 6a, 6b, or 6c would be revision 7.
- b. Any MMEL changes that are more restrictive than the operator's MEL will be implemented by the operator as soon as possible.
- c. In some cases when relief is removed from the MMEL, there will be a specific date for compliance, or guidance for an acceptable date to be negotiated between the FOI and the operator.

24.11.4.4 **FOI Initiated Revision**

- a. A FOI may initiate an MEL revision that is not based on a revision to the MMEL. The FOI should make such a request to the operator in writing, stating specific reasons why the revision is necessary.
- b. A FOI initiated revision may be made upon the discovery that an operator has modified an aircraft or that faulty maintenance or operations procedures exist.
- c. The FOI should work closely with the operator and make every effort to resolve the matter in a mutually agreeable manner.
- d. The operator should be given a reasonable time period to make the required changes depending on whether safety of flight is affected.
- e. In the event that the operator declines to make the required change, the FOI may consult with the DFS to initiate an amendment of the operator's Ops Specs to rescind the authority for the MEL.



24.11.4.5 Modifications Within a Fleet

- a. If an operator has been granted approval to use the MEL for a fleet, and the operator installs a new piece of equipment in one or more aircraft, the operator may continue to operate that aircraft under the provisions of the currently approved MEL.
- b. The operator may not defer repair of the new item until an appropriate revision to the MEL has been approved.

24.12 AVAILABILITY OF MEL FOR FLIGHT CREWMEMBERS.

24.12.1 As per IS 15 flight crewmembers have direct access to the MEL at all times prior to flight. Although not required, the easiest method of compliance with this requirement is for the operator to carry the MEL aboard each aircraft.

24.12.2 The operator may choose to use some system of access to the MEL other than the MEL document.

24.12.2.1 For example, the flight crew may obtain access to the MEL through the ARINC Communications Addressing and Reporting System (ACARS).

24.12.3 The critical element in approving an alternate form of access is whether or not the flight crew has a direct means of access to the appropriate information in the MEL, specifically "O" and "M" procedures.

24.12.3.1 Direct access should not be construed to mean access through telephone or radio conversations with maintenance or other personnel.

24.12.3.2 If the operator chooses to provide the flight crew with access to the MEL by other than printed means, the method must be approved in the operator's MEL programme.

24.13 METHOD OF AUTHORIZING FLIGHT CREWMEMBER ACCESS TO MEL

24.13.1 FOIs may approve a method other than printed means for providing the flight crew with access to the MEL.

24.13.2 Before authorizing such a method, the FOI must be confident that the operator has an adequate means in place to provide flight crews with the complete equivalent of the actual text of the MEL.

24.13.3 This method must be described in detail in the operator's CAASL-FS accepted general operating manual or equivalent.

24.13.4 When the decision is made to authorize this alternative method, the FOI should use appropriate provisions.



24.14 DISCREPANCIES DISCOVERED DURING FLIGHT

24.14.1 GENERAL GUIDANCE

24.14.1.1 Use of the MEL is not applicable to discrepancies or malfunctions that occur or are discovered during flight.

24.14.1.2 Once an aircraft moves under its own power, the flight crew must handle any equipment failure in accordance with the approved flight manual.

24.14.1.3 A flight is considered to have departed when the aircraft moves under its own power for the purpose of flight.

24.14.2 BEFORE TAKEOFF

24.14.2.1 Discrepancies occasionally occur between the time the flight departs and the time it takes off. There are two similar scenarios—

- a. Commercial Air Transport, or
- b. General Aviation and air taxis.

24.14.2.2 Commercial Air Transport

- a. For those operators who are required to use a flight release, the PIC must handle a discrepancy that occurs after the issuance of the release, but before the flight departs, in accordance with the MEL.
- b. The PIC must obtain a new or amended dispatch or flight release, as well as any required airworthiness release.
- c. This new or amended release must contain any applicable flight restrictions necessary for operation with any item of equipment that is inoperative.

24.14.2.3 General Aviation

- a. If the flight manual contains procedures for handling that discrepancy, or if the pilot in command (PIC) deems that the discrepancy does not affect the safety of flight, the flight may continue.
- b. The discrepancy must be addressed prior to the next departure.

24.14.3 DOCUMENTATION OF DISCREPANCIES

24.14.3.1 Provisions of the MMEL preamble require that an airworthiness release be issued or an entry be made in the aircraft maintenance record or logbook prior to conducting any operations with items of equipment that are inoperative.



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24.14.3.2 AOC holders who use a Continuous Airworthiness Maintenance Programme (CAMP) generally require the use of a formal airworthiness release issued by an authorised maintenance person.

24.14.3.3 Other AOC holders must have adequate methods for recording the authorization to operate the aircraft with items of equipment that are inoperative. This does not imply that the involvement of a Sri Lanka licensed mechanic or other person authorised under ANR approve an aircraft for return to service is required in all cases.

24.14.3.4 Unless maintenance actions are performed on the aircraft, AOC holders' flight crews may make appropriate documentation in the aircraft maintenance log required by ANR.

24.14.4 CONFLICT WITH AIRWORTHINESS DIRECTIVES

24.14.4.1 Occasionally an AD may apply to an item of equipment that may be authorised to be inoperative under the MEL.

24.14.4.2 The item may not simply be deferred under the MEL in order to avoid or delay compliance with the AD or a State of Manufacture approved alternate means of compliance with the AD. In all cases, when an AD has been issued, the operator must comply fully with the terms of the AD or a State of Manufacture approved alternate means of compliance with the AD.

24.14.4.3 The State of Manufacture must approve any alternative method of compliance with the AD as provided in the AD.

24.14.4.4 In other cases, the provisions of an AD may allow operation of the aircraft on the condition that certain items of installed equipment be used or be operable. In those cases, the affected items must be operable even though the MEL may provide for deferral of repair.

24.14.5 INTERRELATIONSHIPS OF INOPERATIVE COMPONENTS

24.14.5.1 When the MEL authorizes a component of a system to be inoperative, only that component may be affected.

24.14.5.2 When a system is authorised to be inoperative, individual components of that system may also be inoperative.

24.14.5.3 Any warning or caution systems associated with that system must be operative unless specific relief is authorised in the MEL.

24.14.5.4 The operator must consider the interrelationship of inoperative components. This consideration must include the following—

- a. The interrelationship of one piece of equipment on another
- b. The crew workload
- c. The operation of the aircraft
- d. The flight restrictions



24.15 REPAIR CATEGORIES

24.15.1 When an item of equipment becomes inoperative, and repair is deferred under an MEL, the operator must make repairs as specified by the associated repair category designator ("A," "B," "C," or "D") and the operator's MEL management system.

24.15.2 In the event that more items are installed than those that are required for normal operation, the "C" repair category may be used.

24.15.2.1 For example, if one altitude alerting system is required and the associated repair category is "B," but there are two such systems installed, failure of the first system could be deferred as specified for a "C" category item (10 days).

24.15.2.2 Failure of the remaining system would limit at least one system to the repair category for the "B" category item (3 days).

24.16 DEVELOPMENT AND APPROVAL OF A CDL

24.16.1 An aircraft manufacturer develops a proposed CDL for a specific aircraft type. The proposed CDL is submitted to the responsible ACO for approval by engineering specialists.

24.16.2 The ACO will then coordinate with the appropriate aircraft evaluation group (AEG) to resolve any problems and discrepancies prior to approving the CDL.

24.16.3 For United States (U.S.) certificated airplanes, the CDL, once approved, is incorporated into the limitations section of the airplane flight manual (AFM) as an appendix.

24.16.4 For manufacturers outside the U.S., the CDL may be a stand-alone document and part of the Structure Repair Manual, or another manufacturer's document.

24.16.5 Some operators may choose to attach a copy of the CDL to their MEL for easy and ready reference by flight crews.

24.16.6 USE OF THE CDL

24.16.6.1 Operators must follow the CDL limitations when operating with a configuration deviation. Operators are required to observe the following—

- a. The limitations in the CDL when operating with certain equipment missing (except as noted in the appendix to the approved flight manual)
- b. The flight operations, restrictions, or limitations that are associated with each missing airframe and engine part
- c. Any placard(s) required by the CDL describing associated limitations, which must be affixed in the cockpit in clear view of the pilot in command (PIC) and other appropriate crewmembers



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24.16.7 CDL PROCEDURES

24.16.7.1 The principal operations inspector (FOI) must ensure that the operator has developed appropriate procedures for the PIC and, if appropriate, procedures for notifying dispatch of the CDL missing parts by an appropriate notation in the aircraft logbook or other acceptable means.

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APPENDIX 24-A

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CAA/OP/CL/065
AIR OPERATOR MEL EVALUATION CHECKLIST/REPORT

Date		Maintenance Rep	
Inspector (Operations)		Management Rep	
Inspector (Airworthiness)		Aircraft Registration#	
Location		PIC	
Destination		Other PEL	

For completion instructions, refer to Chapter 2 of the Operations or Airworthiness Inspector Manual.

Y = YES

N = NO

NS = NOT SEEN

NA = NOT APPLICABLE

<i>Check YES column if you reviewed the record, procedure or event and have no comment</i>
<i>Check NO column if you reviewed the record, procedure or event and have a comment</i>
<i>Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment</i>
<i>Check NOT APPLICABLE column if the line item is not required in this particular Operator</i>
<i>Make notes regarding a NO answer for resolution</i>

Y	N	NS	NA	1	OVERALL MANUAL PRESENTATION
				1.1	Bound in a secure form (not loose)?
				1.2	Exterior of binder clearly indicates manual content?
				1.3	Table of contents?
				1.4	Tabbed by ATA chapter?
				1.5	Revision Instructions adequate?
				1.6	List of effective pages provided and correct?
				1.7	Last applicable MMEL revision identified and latest?
				1.8	Preamble and instructions for use adequate?
Y	N	NS	NA	2	INDIVIDUAL PAGE PRESENTATION
				2.1	Page numbered?



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				2.2	Last revision number/date?
				2.3	ATA chapter identified?
Y	N	NS	NA	3	INDIVIDUAL ITEM PRESENTATION & CONTENT
				3.1	Proper MMEL-MEL number comparison?
				3.2	Proper item title?
				3.3	No item relief other than that shown in MMEL is allowed?
				3.4	Aircraft for which item is applicable identified by R/N or S/N?
				3.5	Number of item installed correct?
				3.6	Aircraft with non-standard installation identified by R/N or S/N?
				3.7	Correct repair interval listed?
				3.8	Number required for dispatch conforms to MMEL?
				3.9	Placarding symbols provided in accordance with MMEL?
				3.10	(O) & (M) symbols provided in accordance with MMEL?
				3.11	Remarks correctly aligned with applicable “required” numbers?
				3.12	Wording of MEL remarks not less restrictive than MMEL (special attention to use of “or” & “and”)?
				3.13	Configuration (# installed/required) allowed is in accordance with all Applicable regulations?
Y	N	NS	NA	4	INDIVIDUAL (O) & (M) PROCEDURES
				4.1	There is an ops procedure for every MMEL (O) reference?
				4.2	There is a maintenance procedure for every MMEL (M) reference?
				4.3	Procedures provided in accordance with manufacturers MEL dis- patch guide conform to the source references?
				4.4	Maintenance procedures taken from sources other than the Manufacturer’s dispatch guide are technically correct, meet all remarks and have the source cited?
				4.5	Operations procedures taken from sources other than the manufacturers MEL dispatch guide are technically correct, not a normal operating procedure and meet all remarks?
				4.6	No normal operating procedures are provided?
				4.7	All procedures apply to the “dispatch” of aircraft?
Y	N	NS	NA	5	CDL EVALUATION
				5.1	CDL properly tabbed in rear of MEL?



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				5.2	CDL contents clearly identified?
				5.3	CDL items in accordance with current manufacturers guidance?
				5.4	Operator CDL is based on the latest revision of the manufacturer CDL
Date:					Inspector's Signature:



Appendix 24B

JOINT OPS/AWI MEL REVIEW

Job Aid

File reference:	<input type="text"/>	Date of inspection:	<input type="text"/>
Operator:	<input type="text"/>		
Aircraft Make/Model:	<input type="text"/>		
Air Operator Contact:	<input type="text"/>	MMEL Revision #:	<input type="text"/>
CAASL OPS Inspector:	<input type="text"/>		
CAASL AWI Inspector:	<input type="text"/>		

S = Satisfactory U = Unsatisfactory N/A = Not Applicable

	S	U	N/A
1. The MEL is current with the MMEL date and revision number			
2. Contains the ATA Table of Contents			
3. Contains the Preamble			
4. Contains the Notes and Definitions Section same as the MMEL			
5. Contains list of effective pages			
6. All items addressed in the MMEL covered in the MEL			
If no, include explanation:			
7. Items have been added			
If so, include description:			
8. Each page of the MEL can be matched to MMEL to confirm revision number and date of revision			
9. Describes the operations procedure for placarding:			



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10. Describes the procedure for recording discrepancies:			
11. Describes the procedure for clearing discrepancies:			



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Chapter 25 - TRAINING PROGRAMMES

25.1 GENERAL

25.1.1 Training curriculum approvals follow the five phase general process for approval or acceptance.

25.1.1 The basic steps of this process must be followed.

- a. Each phase, however, may be adjusted to accommodate existing circumstances. Depending on the complexity of the operator's request and the availability of CAASL-FS resources, the approval process may be accomplished in only a few days, or the process may last many months.
- b. The approval process applies to each operator requesting approval of a new curriculum or a revision to a currently approved curriculum. Inherent in the approval process is the CAASL-FS's responsibility to deny approval of any training which does not meet regulatory requirements or which has been found deficient.
- c. Training curriculums which have been granted approval and later found either to be in conflict with regulatory requirements or to be ineffective, must be appropriately modified by the operator, or CAASL-FS approval must be withdrawn.
- d. This evaluation aid establishes procedures for granting approval or withdrawing approval of all or part of a training curriculum.

25.1.2 The training approval process discussed in this section applies AOC holders' training approved under the necessary regulations.

25.2 INITIATING THE APPROVAL PROCESS - PHASE ONE

25.2.1 The training approval process can be initiated by either the operator or the CAASL-FS as follows:

- a. Operator Initiated. The operator informs the CAASL-FS that it is planning to establish a new training curriculum or to change an existing curriculum.
- b. CAASL-FS Initiated. The CAASL-FS informs an operator that revisions to its training programme are required based on recently acquired information relative to training techniques, aviation technology, aircraft operational history, operator performance, or regulatory changes.

25.2.2 When a proposal is initiated by the operator, one of the first steps the FOI or certification project coordinator (CPC) should take is to obtain the following basic information—

- a. Type of operation
- b. Type of equipment to be operated
- c. Geographic areas of operation
- d. Proposed training schedules
- e. Proposed date of revenue operations



- f. Proposed contract training, if any
- g. Type of simulator to be used, if any
- h. Facilities to be used

25.3 CAASL-FS INVOLVEMENT IN PHASE ONE

25.3.1 Early in the process, the CAASL-FS and the operator should establish, through discussion, a common understanding of both the regulatory training requirements and the direction and guidance provided in the AOC Admin Manual.

- a. The FOI or CPC and the operator must examine the entire operation to ensure that any training necessitated by operational requirements, authorizations, or limitations (such as those in the operations specifications, minimum equipment lists, deviations, and exemptions), is included in the operator's training curriculums.
- b. The training programme is the area most affected by operational changes. The FOI should review all general requirements in the regulations and in this manual; that apply to the proposed operation.
- c. The FOI should be aware of changes to the information initially provided by the operator.
- d. The FOI should discuss with the operator the sequence and timing of events which occur in the development and the granting of initial and final approval of a training curriculum.
- e. If the operator's proposal involves complex operations (such as long range navigation or polar navigation operations), the FOI must consult appropriate relevant documents and be prepared to advise the operator during this phase. In such a case, the FOI should also determine whether assistance from a qualified specialist is necessary.

25.3.2 A CAASL-FS inspector should be prepared to provide advice to an operator during training curriculum development. During phase one, the operator must be informed of the procedure for requesting initial approval and of the types of additional supporting information which the FOI will require the operator to submit.

25.3.3 An inspector should be prepared to provide advice and guidance to the operator on the following—

- a. The general format and content of curriculums, curriculum segments, training modules, and flight manoeuvres and procedures documents
- b. Courseware
- c. Facilities
- d. Qualifications of instructor personnel
- e. Other areas of the operator's proposed training programme



25.3.4 Early CAASL-FS involvement is also important for the following reasons—

- a. CAASL-FS advice and guidance during development of training may provide a useful service to the operator. This advice may save the operator and the CAASL-FS from unnecessary use of resources. It may also prevent the operator from submitting a training curriculum proposal which would not be approved by the CAASL-FS.
- b. The FOI can become familiar with the material the operator intends to submit. This facilitates review of the proposal before the granting of initial approval.
- c. The FOI can begin planning long range needs, such as qualification of inspectors on the operator's aircraft, and evaluation of the programme's overall effectiveness.

25.3.5 The operator should be aware of the potential for delays in approval. Such delays may be caused by any of the following reasons—

- a. The applicant for a certificate not meeting the schedule of events
- b. The operator failing to expeditiously transmit information to the CAASL-FS
- c. A change in plans, for example, changing either the training locations or the type of aircraft
- d. Inadequate, insufficient, or unclear material submitted in phase two
- e. Deficiencies in the training discovered during phases two, three, or four
- f. Delays in obtaining equipment (such as simulators) or simulator approval
- g. Higher priority work (such as accidents) assigned to the FOI or other inspectors associated with the training approval process

25.4 REQUESTS FOR INITIAL APPROVAL - PHASE TWO

25.4.1 Phase two begins when the operator submits its training proposal in writing, for initial approval, to the CAASL-FS.

25.4.1.1 The operator is required to submit to the CAASL-FS an outline of each curriculum or curriculum segment and any additional relevant supporting information requested by the FOI.

25.4.1.2 These outlines, any additional supporting information, and a letter must be submitted to the CAASL-FS.

25.4.1.3 This letter should request CAASL-FS approval of the training curriculum.

25.4.1.4 Two copies of each curriculum or curriculum segment outline should be forwarded along with the letter of request to the CAASL-FS.

25.4.2 Each operator must submit its own specific curriculum segment outlines appropriate for its type of aircraft and kinds of operations.

25.4.2.1 These outlines may differ from one operator to another and from one category of training to another in terms of format, detail, and presentation.

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- 25.4.2.2 Each curriculum should be easy to revise and should contain a method for controlling revisions, such as a revision numbering system.
- 25.4.2.3 Curriculums for different duty positions may be combined in one document provided the positions are specifically identified and any differences in instruction are specified for each duty position.
- 25.4.2.4 Each curriculum and curriculum segment outline must include the following information—
- Operator's name
 - Type of aircraft
 - Duty position
 - Title of curriculum and/or curriculum segment including the category of training
 - Consecutive page numbers
 - Page revision control dates and revision numbers
- 25.4.5 Each curriculum and curriculum segment must also include the following items, as appropriate—
- Prerequisites prescribed by regulations or required by the operator for enrolment in the curriculum
 - Statements of objectives of the entire curriculum and a statement of the objective of each curriculum segment
 - A list of each training device, mock-up, system trainer, procedures trainer, simulator, and other training aids which require CAASL-FS approval (The curriculum may contain references to other documents in which the approved devices, simulators, and aids, are listed.)
 - Descriptions or pictorial displays of normal, abnormal, and emergency manoeuvres and procedures which are intended for use in the curriculum, when appropriate (These descriptions or pictorial displays, when grouped together, are commonly referred to as the flight manoeuvres and procedures document. The operator may choose to present detailed descriptions and pictorial displays of flight manoeuvres and procedures in other manuals. For example, the flight manoeuvres and procedures document may be described in an aircraft operating manual. However, as a required part of the training curriculum, it must either be submitted as part of the curriculum or be appropriately referenced in the curriculum.)
 - An outline of each training module within each curriculum segment (Each module should contain sufficient detail to ensure that the main features of the principal elements or events will be addressed during instruction.)
 - Training hours which will be applied to each curriculum segment and the total curriculum hours.
 - The checking and qualification modules of the qualification curriculum segment used to determine successful course completion, including any IS 051, IS 021 & IS 019 qualification requirements for crewmembers or dispatchers to serve in commercial air

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transport operations (such as initial operating experience, line checks, operating familiarization).

25.5 ADDITIONAL RELEVANT SUPPORTING INFORMATION - PHASE TWO

25.5.1 An operator must submit any additional relevant supporting information requested by the FOI.

25.5.2 This information is that additional information the FOI finds necessary for determining whether the proposed training programme is feasible and adequately supported. It is information which would be difficult to include in a curriculum outline format.

25.5.3 The type and amount of supporting information needed will vary depending on the type of training, aircraft types to be operated, and kinds of operations.

25.5.4 The FOI must determine the appropriate types of supporting information to be required.

25.5.5 This should be limited to only that information critical to the determination of the proposed training programme's acceptability.

25.5.6 The following list of types of relevant supporting information is not all-inclusive, but includes information that is typical—

- a. A description of facilities is appropriate if the FOI is unfamiliar with the facilities, or if the facilities are not readily available for examination.
- b. A list of ground and flight instructors and their qualifications may be requested. This information is particularly important if the operator intends to use contract instructors. The FOI should determine whether the proposed instructors meet regulatory requirements and if they are qualified to conduct training.
- c. A detailed description of each flight simulator and training device is appropriate when the simulator or training device is not readily available for the FOI's examination. This detailed description is particularly important when the operator intends to contract for a specific flight simulator or training device. This description should provide sufficiently detailed information to enable the FOI to determine whether the training and checking to be conducted is appropriate for the level of the flight simulator or training device to be used.
- d. A detailed description of minimum student qualifications and enrolment prerequisites is appropriate when such prerequisites are not described in detail in the curriculum. Examples of these prerequisites which may need to be detailed as supporting information include: type of airman licence, aircraft type qualifications, previous training programmes, minimum flight hours, experience with other AOC holders, and recency of experience. This description may be useful to the FOI when determining whether the proposed amount of detail outlined in training modules and the proposed training hours are adequate.
- e. Copies of training forms and records to be used for recording student progress and the completion of training may be required. This ensures the operator has planned for the record keeping requirements required by the regulations. This type of supporting information shall be required of applicants for an air operator certificate. It may also be required of operators with any significant revision to existing training programmes. These forms, records, or computer transmittal worksheets must be designed so that



attendance and course completion information is recorded and retrievable for verifying regulatory compliance.

- f. Supporting information may include samples of courseware, such as lesson plans and instructor guides. Descriptions of other types of courseware, such as home study, computer based instruction, and line oriented flight training (LOFT) scenarios, should be in enough detail to provide an understanding of how the training will be administered and of the proposed instructional delivery method. This information should describe the instructor/student interaction and indicate methods for measuring student learning.

25.6 INITIAL REVIEW OF REQUESTS FOR APPROVAL - PHASE TWO

- 25.6.1 In phase two the FOI must review the submitted training curriculum and supporting information for completeness, general content, and overall quality.
- 25.6.2 A detailed examination of the documents is not required during phase two. If after initial review, the submission appears to be complete and of acceptable quality, or if the deficiencies are immediately brought to the operator's attention and can be quickly resolved, the FOI may begin the phase three in-depth review.
- 25.6.3 If the submission is determined to be incomplete or obviously unacceptable, the approval process is terminated and the FOI must immediately return the documents (preferably within 15 working days) with an explanation of the deficiencies.
- 25.6.4 The documents must be immediately returned, so the operator will not erroneously assume the FOI is continuing the process to the next phase. The approval process can be resumed when the revised training curriculum or curriculum segment is resubmitted.

25.7 TRAINING CURRICULUMS SUBMITTED WITH AOC APPLICATIONS

- 25.7.1 An applicant for a certificate in the early stages of certification, may be unable to provide all information required for its training programme. For example, the applicant may not yet know what training facilities or devices it intends to use.
- 25.7.2 The lack of such information in the formal application does not necessarily indicate that the training curriculum attachment be returned. There should be an understanding between the applicant and the Certification project coordinator (CPC) that such portions are missing.
- 25.7.3 The CPC may initiate the phase three in-depth review without this type of information. Initial approval, however, of a curriculum segment must be withheld until all portions pertinent to the curriculum segment have been examined. For example, it may be appropriate to initially approve a ground training curriculum segment even though the simulator has not yet been evaluated and approved for flight training.
- 25.7.4 However, effective evaluation of training curriculums can be hampered when an excessive number of incomplete curriculum segments are permitted.
- 25.7.5 The CPC shall either delay initial approval of training curriculums or return them to the applicant when an excessive number of incomplete curriculum segments have been submitted with the formal application.

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25.8 IN-DEPTH REVIEW OF SUBMITTED CURRICULUMS - PHASE THREE

25.8.1 Phase three is initiated when the CAASL-FS begins a detailed analysis and evaluation of a training curriculum or curriculum segment.

The purpose of this phase is to determine the acceptability of training curriculums for initial approval. This phase ends either with the initial approval or with the rejection of all or part of the training curriculum. To complete an evaluation in a timely manner the FOI may need to involve other CAASL-FS personnel early in this phase. Certain specialists or offices may be required to participate in the approval process as follows—

- a. The Civil Aviation Inspector – Aircraft Ground Operations on hazardous materials training issues.
- b. The Cabin Services Inspector (CSI) Cabin Crew training issues. Various aviation safety inspector specialists should be involved when appropriate. For example, navigation specialists should be involved with evaluating special navigation operations.
- c. The D (Ops)/ FOI may need to contact the Manufacturer's State of Design for information on training recommendations and minimum equipment list procedures.
- d. The Deputy Director General FSR may need to be involved with locating and directing additional CAASLFS resources to accomplish the approval process.

25.8.2 Before granting initial approval for a specific curriculum or curriculum segment, the FOI must ensure that the following evaluations are accomplished—

25.8.2.1 A side by side examination of the curriculum outline with the appropriate regulations and with the direction provided in this handbook must be performed. This examination is to ensure that training will be given in at least the required subjects and in-flight training manoeuvres. It should also ensure that appropriate training will be given on safe operating practices.

25.8.2.2 An examination of the courseware developed or being developed by the operator must be performed. This review should include a sampling of available courseware such as lesson plans, audio-visual programmes, flight manoeuvres and procedures documents, and student handouts. The courseware must be consistent with each curriculum and curriculum segment outline. From this review, the FOI should be able to determine whether the operator is capable of developing and producing effective training courseware.

25.8.2.3 An inspection of training facilities, training devices, and instructional aids (which will be used to support the training) must be performed if the FOI is not familiar with the operator's training programme capabilities.

25.8.2.4 The training hours specified in each curriculum segment outline must be evaluated. An inspector should not attempt to measure the quality or sufficiency of training by the number of training hours alone. This can only be determined by direct observation of training and testing (or checking) in progress, or by examination of surveillance and investigation reports.

The specified training hours must be realistic, however, in terms of the amount of time it will take to accomplish the training outlined in the curriculum segment so as to achieve the stated training objectives. During the examination of courseware, an inspector should note the times

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allotted by the operator for each training module. These times should be realistic in terms of the complexity of the individual training modules.

25.8.2.5 The number of training hours for any particular curriculum segment depends upon many factors. Some of the primary factors are as follows—

- a. The aircraft family in which the specific aircraft belongs
- b. Complexity of the specific aircraft
- c. Complexity of the type of operation
- d. Amount of detail that needs to be covered
- e. The experience and knowledge level of the students
- f. Efficiency and sophistication of the operator's entire training programme (including items such as instructor proficiency, training aids, facilities, courseware, and the operator's experience with the aircraft)

25.8.3 If after completing these evaluations, the FOI determines that the curriculum or curriculum segment is satisfactory and adequately supported, and that the training hours are realistic, initial approval should be granted.

25.8.4 Sometimes a portion of the submittal may appear to be satisfactory. However, if that portion is dependent upon another undeveloped portion or another unsatisfactory portion, initial approval must be withheld.

- a. For example, a PIC A320 initial equipment, flight training curriculum segment is satisfactory but related training modules within the initial equipment ground training curriculum segment are unsatisfactory.
- b. In such a case, it may be inappropriate to grant initial approval to the initial equipment flight training curriculum segment until the ground training curriculum segment is determined to be satisfactory.

25.8.5 During phase three of the approval process, the FOI must establish priorities to ensure that, if appropriate, the granting of initial approval is not unnecessarily delayed. These priorities should assure that deficiencies are resolved so that initial approval can be granted before the operator's planned starting date for training.

25.9 EXPIRATION DATES FOR INITIAL APPROVALS

25.9.1 When the FOI determines that a training curriculum or curriculum segment should be initially approved, the FOI must also determine an appropriate expiration date for the initial approval.

25.9.2 The expiration date is important throughout phase four of the approval process. IS 013 requires the operator to obtain final approval of training curriculums.

25.9.3 The expiration date provides an incentive to the operator for refining all aspects of the programme to assure that this regulatory requirement is met.



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- 25.9.4 The expiration date also provides the FOI with a time frame with which to plan evaluation activities for determining the effectiveness of the training.
- 25.9.5 The expiration date assigned to an initially approved training curriculum must not exceed 24 months from the date of initial approval. The expiration date of initial approval may be reduced by the FOI if it is apparent that a 24 month time frame will unnecessarily delay final approval.
- 25.9.6 The FOI should be aware that shortening the initial approval expiration date will commit him to completing the final approval phase within the shorter time period.
- 25.9.7 The FOI may grant final approval any time before the expiration date.
- 25.9.8 Except when unforeseen circumstances preclude an adequate evaluation of training effectiveness, an extension to the initial approval expiration date should not be permitted.
- 25.9.9 A new expiration date, however, may be established for a curriculum segment when there are significant revisions to an initially approved curriculum segment.

25.10 METHOD OF GRANTING INITIAL APPROVAL

- 25.10.1 The initial approval letter must include at least the following information—
- Specific identification of the curriculums and/or curriculum segments initially approved, including page numbers and revision control dates
 - A statement that initial approval is granted, including the effective and expiration dates
 - Any specific conditions affecting the initial approval, if applicable
 - A reminder of the necessity for advance notice of training schedules as required by IS 013.
 - If the FOI is authorizing a reduction in the programmed hours as provided in IS 013.
- 25.10.2 An initial approval letter serves as the primary record of curriculum or curriculum segment pages that are currently effective.
- The initial approval may stamp on each page as the method to account for revisions to training documents.
 - If this method is used, the stamp must clearly indicate initial approval and the expiration date.
 - Other acceptable methods include a list of effective curriculum or curriculum segment pages, or pages with a pre-printed signature and date blocks.
- 25.10.3 The original pages of the curriculum or curriculum segment shall be returned to the operator with the transmittal letter.
- These documents should be retained by the operator as an official record.

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- b. A copy of the training curriculum or curriculum segment, with a copy of the transmittal letter granting initial approval attached, shall be maintained on file in the CAASL-FS by the FOI during the period that the initial approval is valid.
- c. The FOI shall also maintain on file with the curriculum all additional relevant supporting information.

25.11 METHOD OF DENYING INITIAL APPROVAL

- 25.11.1 If the FOI determines that initial approval of a proposed training curriculum or curriculum segment must be denied, the operator shall be notified in writing of the reasons for denial.
- 25.11.2 This letter must contain an identification of the deficient areas of the training curriculum and a statement that initial approval is denied.
- 25.11.3 It is not necessary that each minor deficiency which resulted in the denial be identified; however the major deficiencies should be outlined in the letter.
- 25.11.4 It is the operator's responsibility to redevelop or correct the deficient area before resubmission to the CAASL-FS. A copy of the denial letter and a copy of the proposed training curriculum or curriculum segment shall be kept on file in the CAASL-FS.

25.12 EVALUATING INITIALLY APPROVED TRAINING CURRICULUMS - PHASE FOUR

- 25.12.1 Phase four begins when the operator starts training under the initially approved curriculum. This phase should provide the operator with adequate time to test the programme and the flexibility to adjust the programme during CAASL-FS evaluation.
 - a. The FOI must require an operator to provide ongoing schedules of all training and checking to be accomplished under an initially approved training curriculum. The FOI must closely monitor training conducted under initial approval.
 - b. Whenever possible, the first session of training conducted under initial approval should be monitored by the FOI or a qualified operations inspector.
 - c. A CAASL-FS inspector does not need to observe every training session. A sufficient sampling of the training sessions, however, should be observed as a basis for a realistic evaluation.
 - d. Inspectors qualified in the type aircraft, and other individuals knowledgeable of the curriculum subject matter, should assist in evaluating the training.
 - e. During training under initial approval, the operator is expected to evaluate and appropriately adjust training methods as needed.
 - f. Often adjustments can be made by changing courseware and instructional delivery without (or with only minor) revisions to the initially approved curriculum.
 - g. Conversely, it may be necessary for the operator to substantially change the curriculum which may require another initial approval action by the FOI before the changes can be put into effect.
 - h. Sometimes proposed revisions may be transmitted to the FOI just before the initial approval expiration date.

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- i. If the change is significant, the FOI may need to establish a different expiration date for the curriculum segment, or for the revised portions, to allow adequate time for a proper evaluation.
- 25.12.2 During phase four, the operator must demonstrate the ability to effectively train crewmembers and dispatchers.
- a. Each deficiency identified during the evaluation of training conducted under an initially approved curriculum must be discussed with the operator.
 - b. If the deficiencies are significant, they must be documented and kept on file. In most cases, when the cause of a deficiency has been accurately identified, the operator will make the necessary changes to correct the deficiency to obtain final approval.
 - c. Each significant deficiency which has been accurately identified must be immediately corrected. If an operator does not take appropriate corrective action, the FOI shall advise the operator in writing that initial approval is withdrawn.

25.13 ELEMENTS AVAILABLE FOR EVALUATING TRAINING - PHASE FOUR

- 25.13.1 The FOI must develop a plan for systematically evaluating training given under the initially approved training curriculum. This plan should remain in effect throughout the initial approval period.
- 25.13.2 There are five elements which can be evaluated when assessing the overall effectiveness of training programmes. These five elements are—
- a. Curriculum segment outlines,
 - b. Courseware,
 - c. Instructional delivery methods and training environment,
 - d. Testing and checking, and
 - e. Surveillance and investigation of operator activities.
- 25.13.3 Before evaluating a training programme, an inspector must become familiar with the contents of the curriculums or curriculum segments to be evaluated. This preparation is essential if an inspector is to determine whether an operator has developed an effective course of instruction from its initially approved training curriculum.
- 25.13.4 Direct examination of courseware includes reviewing materials such as lesson plans, workbooks, or flight instructor guides. The inspector must determine whether the courseware is consistent with the curriculum or curriculum segment and that it has been organised to facilitate effective instructional delivery. Courseware is usually the training programme element which is most adaptable to revision or refinement. Inspectors must review at least a sampling of the courseware.
- 25.13.5 Direct observation of instructional delivery includes surveillance of training methods, such as instructor lectures, computer based instruction presentations, and in flight instruction.
- 25.13.5.1 Effective learning can only occur when an instructor is organised, prepared, and properly uses the courseware and various training aids.



- 25.13.5.2 The inspector must determine that the instructional delivery is consistent with the courseware. For example, the inspector should note whether the instructor teaches the topics specified in the lesson plan.
- 25.13.5.3 Training aids and devices should function as intended during the instructional delivery.
- 25.13.5.4 In addition, during training, the inspector should be sensitive to the type of questions being asked by students and should identify the reasons for any excessive repetition.
- 25.13.5.5 These conditions may indicate ineffective instructional delivery or courseware. The inspector must also determine if the instructional environment is conducive to learning.
- 25.13.5.6 Distractions which adversely affect instructional delivery, such as excessive temperatures, extraneous noises, poor lighting, cramped classrooms or workspaces, are deficiencies because they interfere with learning.
- 25.13.6 Direct observation of testing and checking is an effective method for determining whether learning has occurred. Examining the results of tests, such as oral or written tests or flight checks, provides a quantifiable method for measuring training effectiveness. The FOI must examine and determine the causal factors of significant failure trends.
- 25.13.7 Direct observation of training and checking in progress is an effective method of evaluating training. Sometimes the opportunity for direct observation, however, will be limited.
- 25.13.7.1 In such cases, the FOI will have to rely more on his evaluation of other sources of information such as reports of surveillance and investigations.
- 25.13.7.2 Results of inspection reports, incident or accident reports, enforcement actions, and other relevant information about the operator's performance should be reviewed by the FOI for indications of training effectiveness.
- 25.13.7.3 The FOI must establish methods to evaluate these sources of information for trends which may develop while training is being conducted under initial approval. For example, repeated reports of deficiencies such as excessive taxi speed, navigation deviations, incomplete briefings, or incorrect use of the checklists, may be traceable to a lack of specific training or ineffective training.
- 25.13.7.4 Such information may provide indications that revisions or refinements are needed for a curriculum segment and/or training modules.
- a. **CURRICULUM SEGMENT OUTLINES** - Curriculum segment outlines contain the specific training modules and the amount of time allocated for the curriculum segment. The modules must be consistent with regulatory requirements and safe operating practices. This element requires direct examination.
 - b. **COURSEWARE** - Courseware converts curriculum outline information into usable instructional material. Courseware must be consistent with the curriculum outline and be organised to permit effective instructional delivery. It is readily adaptable to adjustments and refinement by the operator. This element usually requires direct examination.



- c. **INSTRUCTIONAL DELIVERY METHODS AND TRAINING ENVIRONMENT** - Instructional delivery methods are used to convey information to the student. Effective learning is maximized if the instructional delivery adheres to and properly uses the courseware. The training environment should be conducive to effective learning. This element requires direct observation.
- d. **TESTING AND CHECKING** - Testing and checking is method for determining whether learning has occurred. Testing and checking standards are used to determine that a desired level of knowledge and skill has been acquired. Testing and checking also measures the effectiveness of courseware and instructional deliver. This element requires direct observation. It can be supplemented by examining operator records of test and checks.
- e. **SURVEILLANCE AND INVESTIGATION OF OPERATOR ACTIVITIES** - Surveillance and investigations produce information about an operator's overall performance. A high rate of satisfactory performance usually indicates a strong, effective training programme. Repeated unsatisfactory performances can often be traced to deficiencies in a training programme. This element requires the examination and analysis of surveillance and investigative reports.

25.14 METHOD FOR GRANTING FINAL APPROVAL - PHASE FIVE

25.14.1 This phase involves the granting of final approval of an operator's training curriculum. Based on the results of the evaluation, the FOI must determine whether to grant or deny final approval of a training curriculum. This determination must be made before, the expiration date of the initial approval.

25.14.1.1 If the FOI decides not to grant final approval, the procedures outlined below shall be followed.

25.14.1.2 If the FOI decides that final approval should be granted, the following procedures apply:

25.14.2 PROGRAMMES THAT CONTAIN A LIST OF EFFECTIVE PAGES

25.14.2.1 Although the method presently stated in this handbook may still be used in the approval process (that is, stamping each page), another procedure may also be used.

25.14.2.2 Final approval of the training curriculum can be granted and documented by the FOI on the List of Effective Pages.

25.14.2.3 This means that the CAASL-FS has given final approval of every page of the operator's training curriculum, as listed on that page, but only one CAASL-FS approval block must be completed and signed.

25.14.2.4 The stamped page that documents final approval of the training curriculum and/or curriculum segment shall be stamped for approval, dated, and signed by the FOI. The approval stamp that appears on the page should be a facsimile of the stamp that appears in this paragraph.

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- 25.14.2.5 The original curriculum and/or curriculum segment must contain the one page that documents CAASL-FS approval on the List of Effective Pages. The curriculum and/or curriculum segment must be transmitted to the operator with an approval letter signed by the
- 25.14.2.6 FOI in accordance with handbook guidance.
- 25.14.3 **PROGRAMMES THAT DO NOT CONTAIN A LIST OF EFFECTIVE PAGES**
- 25.14.3.1 The original and a copy of each page of the training curriculum and/or curriculum segment shall be stamped for approval, dated, and signed by the FOI. The approval stamp shall appear on each page and be a facsimile of the following stamp:
- 25.14.3.2 The original stamped curriculum or curriculum segment must be transmitted to the operator with an approval letter signed by the FOI.
- This letter must specifically identify the curriculum or curriculum segment; contain a statement that final approval is granted; and provide the effective date of approval.
 - This letter must also state that final approval shall remain in effect until otherwise notified by the CAASL-FS that a revision is necessary provided the operator continues to train in accordance with the approved curriculum.
 - If the FOI is authorizing a reduction in the programmed hours previously approved, the letter must contain a statement concerning the basis for reduction.
 - A copy of the stamped curriculum or curriculum segment, and a copy of the approval letter must be kept on file in the CAASL-FS.

25.15 REVISIONS TO TRAINING CURRICULUMS

- 25.15.1 Revisions to initially approved training curriculums shall be processed as described in this section. To incorporate significant revisions into a training curriculum with final approval usually requires the full training approval process.
- 25.15.2 Final approval, however, may be directly granted to a proposed revision, if the revision involves any of the following situations—
- 25.15.2.1 Correction of administrative errors such as typographical or printing errors
- 25.15.2.2 A re-organization of training, or any changes in the sequence of training that does not affect the quality or quantity of training
- 25.15.2.3 An improvement to the quality, or an increase in the quantity, of training
- 25.15.3 Other proposed revisions, including any proposal to reduce the approved number of training hours, are subject to the training programme approval process. Although each step in the process must be completed, the process may be abbreviated in proportion to the complexity and extent of the proposal.

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25.15.4 There are many factors that could require revisions to training curriculums. Such factors include the following—

- 25.15.4.1 The effects and interrelationships of changes in the kind of operations
- 25.15.4.2 The size and complexity of an operation
- 25.15.4.3 The type of aircraft being used
- 25.15.4.4 Any special authorizations through operations specifications
- 25.15.4.5 A revised MEL
- 25.15.4.6 Any exemptions or deviations

25.16 WITHDRAWING APPROVAL OF TRAINING CURRICULUMS

- 25.16.1 Before withdrawing approval of an operator's training curriculum or curriculum segment, the FOI shall make reasonable efforts to convince the operator to make the necessary revisions.
- 25.16.2 It is important to understand that withdrawing approval could be detrimental to the operator's business.
- 25.16.3 The operator's ability to continue to hold a certificate may be in question if a new curriculum is not submitted for initial approval within a reasonable period of time.
- 25.16.4 A decision to withdraw approval must be based on sound judgment and justifiable safety reasons.
- 25.16.5 When sufficient reasons are established, it is mandatory for the FOI to take immediate action to remove CAASL-FS approval from an ineffective or noncompliant training curriculum. When an approval is withdrawn, the FOI must ensure that the operator clearly understands that any further training conducted under an unapproved curriculum is contrary to ANR requirements.
- 25.16.6 Enforcement action must be taken if any company employee who received unapproved training is used in commercial air transport operations.
- 25.16.7 The three methods for withdrawing approval of a training curriculum are as follows—
 - 25.16.7.1 Allowing an initially approved training curriculum to expire without granting final approval
 - 25.16.7.2 Withdrawing approval of an initially approved training curriculum before the expiration date)
 - 25.16.7.3 Withdrawing approval of a training curriculum which has already received final approval.



25.17 EXPIRED TRAINING CURRICULUMS

- 25.17.1 A training curriculum granted initial approval has an expiration date. Usually, this date shall not be later than 24 months after the initial approval date.
- 25.17.2 If the FOI does not grant final approval before the expiration date, training under that curriculum must terminate as of that date.
- 25.17.3 Therefore, the FOI shall not allow an initially approved curriculum to expire due to the CAASLFS's inability to administratively grant final approval.
- 25.17.4 Final approval may not be granted to an operator's training curriculum for several reasons.
- 25.17.4.1 One reason, for example, may be the operator's inability to achieve an acceptable level of training effectiveness during phase four of the approval process.
- 25.17.4.2 Another example of a reason for not granting final approval is the discontinued use of the initially approved curriculum.
- 25.17.5 When the FOI decides not to grant final approval before the expiration date, he must notify the operator of this decision in writing, at least 30 days before the expiration date of the initially approved curriculum.
- 25.17.5.1 An operator not so notified may mistakenly assume that the initial approval will continue in effect until receipt of notification of either final approval or termination.
- 25.17.5.2 The notification letter should contain the reasons for allowing the curriculum to expire and should state that any further training under the expired curriculum will not be in compliance with regulatory requirements.
- 25.17.5.3 A FOI who fails to provide this 30 day notification must establish a new expiration date so that appropriate notification can then be given to the operator.

25.18 WITHDRAWAL OF INITIAL APPROVAL OF TRAINING CURRICULUMS

- 25.18.1 A FOI may decide to withdraw initial approval any time during phase four of the approval process.
- 25.18.2 This action may be necessary if the training is not in regulatory compliance, does not provide for safe operating practices, or is ineffective in meeting training objectives.
- 25.18.3 An operator who has received a letter withdrawing approval must revise or refine the training curriculum and resubmit it for initial approval.
- 25.18.4 The FOI must ensure that the operator understands that it is his responsibility to correct each deficiency in the training programme. The FOI withdraws initial approval of training curriculums by letter.



- 25.18.5 This letter must contain both a statement informing the operator that initial approval is withdrawn and the effective date of the withdrawal.
- 25.18.6 This letter must include the reasons for withdrawal of approval and a precaution concerning the use of persons trained under a curriculum which is not CAASL-FS approved. A sample letter follows.

25.19 WITHDRAWAL OF FINAL APPROVAL OF TRAINING CURRICULUMS

- 25.19.1 Each operator is responsible for ensuring that its training curriculums, once they have been granted final approval, continue to provide training in accordance with the conditions under which final approval was granted.
- 25.19.2 In accordance with IS 013, whenever the CAASL-FS determines revisions to a curriculum that has been granted final approval are necessary, the operator shall, after notification, make the necessary changes to ensure the effectiveness and acceptability of its training.
- 25.19.3 Such notification by the CAASL-FS effectively withdraws final approval.
- 25.19.4 These regulations also provide the operator with certain appeal rights. Therefore, the following procedures will be applied when a decision is made to withdraw final approval of a training curriculum:
- 25.19.5 The FOI shall inform the FS Director of the impending action to withdraw final approval. Following that action the FOI must notify the operator in writing that revisions are required in accordance with the necessary regulations
- 25.19.6 The notification letter must contain the following—
- 25.19.6.1 A statement that CAASL-FS approval of the training curriculum is withdrawn
- 25.19.6.2 A list of the revisions which must be made
- 25.19.6.3 A brief description of the reasons necessitating the revisions
- 25.19.6.4 A precautionary statement concerning the use of personnel trained under a curriculum which is not CAASL-FS approved
- 25.19.6.5 A statement that the actions specified in the letter may be appealed
- 25.19.6.6 Instructions on how to make an appeal
- 25.19.7 If the operator chooses to revise the training programme in response to the notification letter, the proposed revision will be processed in the same manner as a request for initial approval. The FOI must re initiate the five phase approval process previously described.
- 25.19.8 If an operator decides to appeal the FOI's action, it must, within 30 days after receiving notification, petition the Director FS for reconsideration of the withdrawal of final approval.



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- 25.19.8.1 The petition must be in writing and contain a detailed explanation on why the operator believes the revisions described in the withdrawal notice are unnecessary. If upon receipt of a petition, the Director FS believes that an emergency exists which directly impacts aviation safety, he must immediately inform the operator in writing, of his decision.
- 25.19.8.2 The FS Director's letter must include a statement that an emergency exists, a brief description of the revisions which must be made, and the reasons the revisions are necessary. In this case, the CAASL-FS director's letter upholds the FOI's decision to withdraw final approval.
- 25.19.8.3 The operator must revise its training programme if CAASL-FS approval is to be obtained. If the CAASL-FS director does not believe an emergency exists, careful consideration must be given to both the operator's petition and the FOI's reasons for withdrawal of approval.
- 25.19.8.4 The operator's petition stays the FOI's withdrawal of final approval and the operator may continue to train under the training curriculum, pending the Director FSR's decision.
- 25.19.8.5 The CAASL-FS director may need to conduct additional evaluations of the operator's training programme.
- 25.19.8.6 It may be appropriate for the CAASL-FS director to obtain additional facts from other sources.
- 25.19.8.7 The CAASL-FS director must make a decision within 60 days after receipt of an operator's petition.
- 25.19.8.8 If the CAASL-FS director accepts the operator's explanations, he will direct the FOI to rescind the letter that withdrew final approval, either partially or fully. If the decision is to uphold the FOI's action, the CAASL-FS director must respond to the operator's petition in writing.
- The letter denying the petition should indicate that careful consideration was given to the petition.
 - The letter must also contain the reasons for denying the petition and a statement that confirms the withdrawal of final approval.
 - The letter must also contain a statement that any training conducted under the unapproved training curriculum is contrary to the ANRs.

25.20 ORGANISATION OF CAASL-FS TRAINING PROGRAMME FILES


- 25.20.1 The DD (Ops) shall maintain a separate training programme file/files for each operator at the CAASL-FS. Each operator's training programme file will be organized and maintained to keep each major curriculum type and any revisions together.
- 25.20.2 Superseded training curriculum pages must be kept on file for 2 years. All correspondence and additional relevant supporting information associated with each training curriculum will be filed with the curriculum or curriculum segment

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CIVIL AVIATION AUTHORITY OF SRI LANKA

APPENDIX 25A

 CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Training Program Inspection Report			
Inspection Date:		Contact Details:	
Operator:		Civil Aviation Authority of Sri Lanka, No. 04, Hunupitiya Road, Colombo 04, Sri Lanka. Website: www.caa.lk	
Location:		Director Flight Safety Tp. 94 11 2304650 Fax. 94 11 2358879	Director General of Civil Aviation, Phone: 94 11 2358800 Fax: 94 11 2304644
Training programme Inspected:			
Remarks legend: S – Satisfactory U – Unsatisfactory N/O – Not Observed N/A- Not Applicable			
A	TRAINING PROGRAMME	D	TRAINING FACILITIES AND ENVIRONMENT
A.1	Appropriate Title(s)	D.1	Classroom Space
A.2	List of Effective Pages	D.2	Storage Space
A.3	Record of Revisions	D.3	Instructor Areas
A.4	CAA Approved	D.4	Lighting
A.5	Sufficient Details	D.5	Noise and Temperature
A.6	Training Hours Specified		
A.7	Objective(s) Stated	E	GROUND INSTRUCTORS / FLIGHT INSTRUCTORS
A.8	Currency	E.1	Training
A.9	Conformity	E.2	Knowledge
		E.3	Proficiency
B	INSTRUCTOR COURSEWARE	E.4	Instructional Technique and
B.1	Title	E.5	Adherence
B.2	Detail	E.6	Briefings
B.3	Usability / Practicality	E.7	Debriefings
B.4	Consistency	E.8	Evaluation
B.5	References		
		F	TRAINING AIDS AND EQUIPMENT
C	STUDENT COURSEWARE	F.1	Instructions for Use
C.1	Consistency	F.2	Condition
C.2	Detail	F.3	Fidelity
G	FLIGHT SIMULATOR & TRAINING DEVICES	H	CHECK AIRMAN
G.1	Approval	H.1	Staffing
G.2	Condition	H.2	Training and Qualification
G.3	Publications	H.3	Standardization
		I	ORAL AND PRACTICAL TEST
		I.1	Conform to Accepted In'l Standards
		I.2	Comply with Regulations
		J	QUALITY CONTROL
		J.1	Training Adequately
		J.2	Utilized Progress Evaluation
		J.3	Training Folders
Remarks:			
Inspector(s)'s code(s):			



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Chapter 26 - TRAINING INSPECTIONS

26.1 GENERAL

- 26.1.1 The inspector's objective is to ensure that the operator's training programme complies with regulatory requirements and that instructional methods are effective.
- 26.1.2 Flight operations inspectors (FOIs) are required to schedule annual training programme surveillance as part of a work programme, in response to—
- Minimum required annual inspection
 - (MRAI) guidelines, or
 - When an operator's inspection reports, incidents, or accidents indicate deficiencies in crewmember or dispatcher skill or knowledge.

26.2 TRAINING PROGRAMME INSPECTION AREAS

- 26.2.1 Training programme inspections involve much more than simply observing "training in progress."
- 26.2.2 The CAASL-FS has identified five primary inspection areas to be observed during training programme inspections—
- Training curriculums
 - Courseware
 - Instructional delivery methods
 - Testing and checking methods
 - Specific topics

26.2.3 ANNUAL INSPECTION PLAN

- 26.2.3.1 Principal inspectors must develop annual inspection programmes that are adapted to specific operators.
- 26.2.3.2 Training programmes vary in their complexity depending on the operator's size, aircraft fleet diversification, number of crewmembers and dispatchers, training locations, and scope of operation.
- FOIs may find that a single annual inspection is sufficient to verify the effectiveness of a simple operator's programme.
 - Inspection of a complex operator, however, requires a modular approach in which specific programme components or locations are identified and inspected in progressive increments.



26.2.4 SPECIAL INSPECTIONS

- 26.2.4.1 A FOI may determine that there is a need to initiate a "special emphasis" training programme inspection.
- 26.2.4.2 This type of inspection may be initiated for such reasons as incidents, accidents, or a series of deficiencies discovered through trend analysis of inspection data.
- 26.2.4.3 "Special emphasis" training programme inspections are relatively short in duration and usually focus on a limited area, such as training on the use of checklists or on wind shear.

26.3 CONDUCT A TRAINING PROGRAMME INSPECTION

- 26.3.1 There are many methods of curriculum development and training methods that an operator may use.
- 26.3.2 To obtain approval of a programme, the operator must demonstrate that the programme or programme segment is in compliance with regulatory requirements and that it effectively prepares crewmembers and dispatchers to perform duties in revenue service.
- 26.3.3 Inspectors should be aware of the competitive economic incentives operators have to improve the quality of, and to reduce the costs of, their training.
- 26.3.4 Operators have great latitude in developing training programmes tailored to their needs, and FOIs have great latitude in approving individualized programmes.

26.3.5 PREPARATION

- a. Before conducting an inspection of a particular training programme area, the inspector should first obtain a copy of the operator's approved training programme outline and become familiar with it.
- b. The inspector should review the outline for regulatory compliance and for adequate subject coverage.
- c. Should the inspector discover a discrepancy that requires a modification of the outline, a report must be made to the FOI by means of the Action safety issue tracking process.
- d. Should the inspector discover a serious discrepancy, the inspector shall notify the DFS by telephone and follow that up with an Action safety issue entry.

26.3.6 ON SITE ACTIVITIES

- 26.3.6.1 On arriving at the training site, inspectors should—
- a. Introduce themselves to the person conducting the training,
 - b. Present their CAASL-FSSD credentials, and
 - c. State the purpose of the inspection.



- 3.6.2 Inspectors shall refrain from active participation in the training being conducted and shall make every effort not to influence the training environment or the instruction in the subject matter.
- 3.6.3 Should an inspector have comments on any of the areas of training, the inspector may communicate this information to the appropriate individual(s) in private.
- 3.6.4 The inspector will reserve comments for debriefing of the instructor until after the training session or during an appropriate break in training.
- 3.6.5 Inspectors should be aware that approved training hours are measured by curriculum segments and that each hour of training normally contains a reasonable "break time" of 10 minutes.

26.4 TRAINING DELIVERY INSPECTION EMPHASIS

26.4.1 COURSEWARE INSPECTION

- 26.4.1.1 While observing the training, inspectors should evaluate the courseware. Inspectors should also evaluate whether or not the courseware and the instructor are effective in communicating the essential points of the lesson.

26.4.1.2 Instructor Courseware

- a. The inspector must observe whether or not the operator's instructor guides and lesson plans follow the approved outline.
- b. During observation, inspectors must also ensure that instructor guides and lesson plans adhere to the following criteria—
- Instructor courseware should be clearly titled for the appropriate curriculum segment.
 - The instructor must be able to conduct detailed instruction for each subject area.
 - Instructional material should be presented in a logical manner and in a sequence that is easy to use and comprehend.
 - Courseware should provide references to applicable manuals of the operator.
 - The instructor should use some means of determining that the students are properly assimilating the material (such as "responder" panels, multiple choice questions, or in class exercises).

26.4.1.3 Student Courseware

- a. The inspector must evaluate various "self-teaching" training mediums such as video tapes, audio-visual (carousel type) slide presentations, computer based training (CBT) presentations, programmed teaming publications, and home study materials, to ensure that they satisfy the requirements of the approved outline.



- b. Training mediums must adhere to the following standards—
- The information must agree with the operator's manual and other publications.
 - The material must have sufficient detail to ensure that students comprehend the applicable subject area.
 - The courseware should include some means of testing student assimilation of information presented.

26.4.2 INSTRUCTIONAL DELIVERY METHODS

26.4.2.1 This inspection area consists of the following inspection modules—

26.4.2.2 Training Facilities/Environment Inspection

- a. The inspector must ensure that the operator's training facilities and the instructional environment are conducive to learning.
- b. An inspector must ensure that the facilities meet the following standards—
- Provide adequate seating space for students
 - Provide storage areas for training materials
 - Provide area for instructors to prepare their lessons
 - Are free of distractions, which adversely affect instructional delivery (such as excessive temperatures, extraneous noise, poor lighting, and cramped classrooms and/or work spaces)

26.4.2.3 Criteria for Instructors

- a. The inspector must ensure that the quality of instruction provided by instructors in both ground and flight training segments is effective.
- Instructors must create an effective environment for training.
 - The instructor must be flexible and alert to individual needs of the students.
- b. The following guidelines apply to instructors and/or flight instructors. Instructors must follow these criteria where applicable.
- i). Instructors—
- Must know the operator's training policies and procedures, know how to complete required training forms, and must exhibit satisfactory instructional methods and techniques
 - Must be knowledgeable in the specific area of instruction and must be able to present the material in a logical, clear, and organized manner



- Must be aware of the minimum equipment required for each element of training and must conform to the limitations imposed on the training element(s) by inoperative component(s)
 - Should follow the applicable lesson plans, guides or other training aids to ensure that the material is properly presented as designed
- ii) Flight Instructors—
- Must be competent in the operation of flight training devices or flight simulators and must be
 - knowledgeable of the training elements that may be accomplished in that level of simulator or training device
 - Should provide a thorough pre-flight briefing on all manoeuvres and procedures that will be accomplished
 - Should provide a thorough post flight debriefing to review each student's performance during a training session

26.5 TRAINING EQUIPMENT

26.5.1 TRAINING AIDS & EQUIPMENT

26.5.1.1 Inspectors must ensure that the operator's training aids and equipment are appropriate to the subject matter and that they operate properly.

26.5.1.2 This includes audio-visual equipment, systems mock-up boards, panel layouts, ground training devices, instructor station equipment, student responders (if applicable), and other related items.

- a. All equipment used in the training programme must operate and function in good working order. Replacement parts or components (such as slide projector lamps) should be readily available.
- b. Any equipment designated to be used for "self-teaching" purposes, such as CBT platforms, must have clear operating instructions readily available for student use
- c. Systems panels, layouts, boards, or mock-ups (such as aircraft exit mock-ups) should accurately represent the designated aircraft.

26.5.2 FLIGHT SIMULATOR OR TRAINING DEVICE INSPECTION MODULE

26.5.2.1 The inspector should ensure that the operator's flight simulators and flight training devices are being adequately maintained and that they effectively replicate the associated aircraft.



26.6 TESTING & CHECKING

26.6.1 In the inspection of an operator's training programme, the inspector must conduct observations of the elements that involve evaluation and qualification.

26.6.2 These elements include, but are not limited to—

26.6.2.1 Check pilot programmes and activities,

26.6.2.2 Training records,

26.6.2.3 Failure rates, and

26.6.2.4 Testing and checking standards.

26.6.3 The inspector must evaluate the following modules:

26.6.4 CHECK PILOT PROGRAMMES AND ACTIVITIES.

26.6.4.1 The inspector should evaluate all elements that relate to check pilot training and qualification, check pilot records, and standardization programmes.

26.6.5 TRAINING RECORDS

26.6.5.1 The inspector should evaluate the operator's training records for information regarding the overall effectiveness of an operator's training programme.

26.6.5.2 The testing and checking results available from training records are an excellent source of information for FOIs to establish positive or negative trends in the operator's training programme.

26.6.6 ORAL & PRACTICAL TESTS

26.6.6.1 Inspectors should observe or conduct a number of airman certification evaluations as well as proficiency, competency, or line checks (as applicable) to determine the overall effectiveness of the operator's training programmes, check pilot programmes, and testing and/or checking standards.

26.6.6.2 Inspectors should place specific emphasis on flight events which require repetition or excessive instruction and should evaluate them according to the following criteria—

26.6.4.1 Testing and checking standards must comply with the regulations, the safe operating practices, and the guidance contained in this handbook.

26.6.4.2 Testing and checking standards must be consistently applied throughout the operator's training organization by its check pilot and instructor personnel.

26.7 QUALITY ASSURANCE

26.7.1 The inspector shall observe the operator's quality assurance programme to ensure that training effectiveness is continually monitored and that specific areas or items are corrected when necessary.

26.7.2 The operator's quality assurance system must ensure that students do not proceed to the next module or training segment until satisfactory proficiency has been achieved.

26.7.3 Additionally, training folders must be maintained by the operator while students are in a specific curriculum.

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26.7.4 Inspectors should review the information contained in these folders to identify any deficient trends.

26.7.5 This information coupled with the results of testing and checking, provides a quantifiable method for measuring training effectiveness.

26.8 INSPECTION RESULTS

26.8.1 As a source of information about an operator's overall performance, inspectors can evaluate inspections and investigations previously done on the operator.

26.8.1.1 A high rate of satisfactory performance usually indicates a strong, effective training programme.

26.8.1.2 Repeated cases of unsatisfactory performance, however, often indicate deficiencies in an operator's training programme.

26.8.2 USE OF THE GDI

26.8.2.1 The Action report and Safety Resolution reports are effective tools for inspectors to use during the examination and analysis of information obtained from investigative and inspection reports.

26.8.2.1 Standard and ad hoc reports can be generated by the system to search for inspector comment

26.8.2.2 Codes which specifically relate to or, through analysis, could lead to deficient areas in an operator's training programme.

26.8.3 PRINCIPAL INSPECTOR REVIEW

26.8.3.1 The FOI shall review results of inspection reports, incident or accident reports, enforcement actions, and other relevant information about the operator's performance for indications of training effectiveness.

26.8.3.1 For example, repeated reports of deficiencies, such as configuring too late, incomplete briefings, or incorrect use of the checklists may be traceable to a lack of specific training or ineffective training in a particular area.



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CAA/OP/CL/065

CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Training Program Inspection Report												
Inspection Date:				Contact Details: Civil Aviation Authority of Sri Lanka, No. 04, Hunupitiya Road, Colombo 04, Sri Lanka. Website: www.caa.lk								
Operator:												
Location:				Director Flight Safety Tp. 94 11 2304650 Fax. 94 11 2358879			Director General of Civil Aviation, Phone: 94 11 2358800 Fax: 94 11 2304644					
Training programme Inspected:												
Remarks legend: S – Satisfactory U – Unsatisfactory N/O – Not Observed N/A- Not Applicable												
A TRAINING PROGRAMME			D TRAINING FACILITIES AND ENVIRONMENT			G FLIGHT SIMULATOR & TRAINING DEVICES						
A.1	Appropriate Title(s)		D.1	Classroom Space		G.1	Approval					
A.2	List of Effective Pages		D.2	Storage Space		G.2	Condition					
A.3	Record of Revisions		D.3	Instructor Areas		G.3	Publications					
A.4	CAA Approved		D.4	Lighting								
A.5	Sufficient Details		D.5	Noise and Temperature								
A.6	Training Hours Specified		E GROUND INSTRUCTORS / FLIGHT INSTRUCTORS			H CHECK AIRMAN						
A.7	Objective(s) Stated					H.1	Staffing					
A.8	Currency		E.1	Training		H.2	Training and Qualification					
A.9	Conformity		E.2	Knowledge		H.3	Standardisation					
B INSTRUCTOR COURSEWARE			E.3	Proficiency		I ORAL AND PRACTICAL TEST STANDARDS						
			E.4	Instructional Technique and								
			B.1	Title		E.5	Adherence		I.1	Conform to Accepted In'l Standards		
			B.2	Detail		E.6	Briefings		I.2	Comply with Regulations		
			B.3	Usability / Practicality		E.7	Debriefings					
			B.4	Consistency		E.8	Evaluation					
B.5	References		F TRAINING AIDS AND EQUIPMENT			J QUALITY CONTROL						
C STUDENT COURSEWARE						F.1	Instructions for Use		J.1	Training Adequately		
			C.1	Consistency		F.2	Condition		J.2	Utilised Progress Evaluation		
			C.2	Detail		F.3	Fidelity		J.3	Training Folders		
Remarks: 												
Inspectors Code; 												



CIVIL AVIATION AUTHORITY OF SRI LANKA APPENDIX 26-B



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Civil Aviation Authority of Sri Lanka

Air Operator approval of instructor evaluation Checklist/Report

Training in Progress Inspection

Date		Organization	
Inspector		Location	

For completion instructions, refer to Chapter 2 of the Operations or Airworthiness Inspector Manual.

Y = YES

N = NO

NS = NOT SEEN

NA = NOT APPLICABLE

<i>Check YES column if you reviewed the record, procedure or event and have no comment</i>
<i>Check NO column if you reviewed the record, procedure or event and have a comment</i>
<i>Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment</i>
<i>Check NOT APPLICABLE column if the line item is not required in this particular Operator</i>
<i>Make notes regarding a NO answer for resolution</i>

YES	NO	NS	NA	1	ADMINISTRATION
				1.1	Adequate accommodation and facilities?
				1.2	Adequate supervisory support staff available?
				1.3	Adequate administrative support staff available?
				1.4	Training schedules coordinated with operational needs?
YES	NO	NS	NA	2	PRODUCTION FACILITIES
				2.1	Printing capability?
				2.2	Presentation development capability?
				2.3	Video editing capability?
				2.4	Electronic versions of training documents and handouts?
				2.5	Computers available to training and checking personnel?
YES	NO	NS	NA	3	TRAINING & PROCEDURES MANUAL
				3.1	Current revision (compare to CAA approved copy)?
				3.2	Current list of effective pages (compare to CAA approved copy)?
				3.3	Manual properly updated?
				3.4	Pertinent portions of manual provided to instructor, checking and administration staff?
				3.5	Tracking of amendments provided to personnel?
YES	NO	NS	NA	4	CURRICULUM & LESSON PLANS
				4.1	Curriculum(s) in use available?



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				4.2	Lesson plan(s) in use available?
				4.3	Curriculum(s) and lesson plan(s) current to relevant regulation and industry practices?
YES	NO	NS	NA	5	INSTRUCTOR(S)
				5.1	Adequate staffing/availability for range of training?
				5.2	Knowledge of subjects and procedures?
				5.3	Instruction techniques and delivery?
				5.4	Adherence to lesson plan outline, content and timing?
				5.5	Instructor(s) have proper qualifications?
				5.6	Instructor(s) records up-to-date?
				5.7	Appropriate "O" checklist for evaluation of instructor records completed?
YES	NO	NS	NA	6	CHECKING PERSONNEL
				6.1	Adequate staffing/availability for range of checking?
				6.2	Checking personnel records are available?
				6.3	Checking personnel records up-to-date?
				6.4	Appropriate "O" checklist for evaluation of checking person performance completed?
				6.5	Appropriate "O" checklist for evaluation of checking person records completed?
YES	NO	NS	NA	7	EVALUATION & DEBRIEFINGS
				7.1	Were the acceptable completion standards available?
				7.2	Did the student receive a debriefing regarding performance?
YES	NO	NS	NA	8	COMPLETION OF RECORDS
				8.1	Instructor or checking person made completion entries in student's record(s)
				8.2	Entries were accurate with respect to the debriefing and the student's performance?
YES	NO	NS	NA	9	CLASSROOMS & TRAINING AREAS
				9.1	Number and size adequate for the purpose used?
				9.2	Student seating and writing accommodation?
				9.3	Student visibility accommodation?
				9.4	Student hearing accommodation?
				9.5	Minimal visual and aural distractions?
				9.6	Reasonable heating/cooling/ventilation/lighting?
YES	NO	NS	NA	10	BRIEFING ROOMS FOR PRE-/POST-FLIGHT LESSON
				10.1	Number and size adequate for the task?
				10.2	Adequately furnished and equipped?
YES	NO	NS	NA	11	DOCUMENTS & HANDOUTS [as specified in T&C manual, curriculum or lesson plan evaluated]
				11.1	Appropriate route and navigation charts available?



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				11.2	Appropriate portions of Operations Manual available?
				11.3	Training source materials and examples?
				11.4	Training problems and calculations?
				11.5	Tests and other evaluation tools?
YES	NO	NS	NA	12	EQUIPMENT [as specified in T&C manual, curriculum or lesson plan evaluated]
				12.1	White boards, markers and erasers?
				12.2	Flight deck pictorial layout available?
				12.3	Overhead projector?
				12.4	Computer projector?
				12.5	Video player?
				12.6	Computer?
				12.7	Special Equipment – System Mock-up Available?
				12.8	Special Equipment – Synthetic trainer available?
				12.9	Special Equipment – Simulator available?

INSPECTOR SIGNATURE		ORG REP SIGNATURE	
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Chapter 27 - FLIGHT SIMULATION TRAINING DEVICES

27.1 BACKGROUND

27.1.1 As per IS 10 any training device to be used by a Sri Lanka aircraft operator for qualification for flight crews (pilots, flight engineers, navigators, cabin crews, etc.) or ground crews (maintenance/avionics personnel, etc.) is subject to CAASL-FS approval, prior to use. This discussion will deal with approval for a Sri Lanka aircraft operator to utilize a simulator that has been previously approved for use by another operator (Sri Lanka or otherwise).

27.1.2 A Sri Lanka AOC holder must make a written approval request, specifying the training or checking that is intended. Regardless of the operator's intended application of the training device, there are general areas of interest to the approving Authority—

27.1.3 APPROVAL DOCUMENTS

27.1.3.1 Has the operator provided approval documents from the civil aviation authorities providing surveillance/qualification of the device.

27.1.4 AIRCRAFT VS. SIMULATOR DIFFERENCES

27.1.4.1 Has the operator provided detailed layouts of their aircraft cockpit and detailed layouts of the simulator, for comparison purposes?

27.1.4.2 Are there aircraft/simulator differences; if so is a differences training course required?

- a. Make/Model/Series
- b. Engines (Manufacturer, thrust, type, etc.)
- c. Instrumentation (Analog vs. Digital, Total Glass CP, etc.)
- d. Fuel System (number of tanks, jettison capability, range)
- e. Electrical System (number of generators, backup generator)
- f. Hydraulics (number of hydraulic pumps, RAT)
- g. Lift/Drag Devices (leading edge, trailing edge, spoilers, etc.)
- h. Air-conditioning & Pressurization (Number of Packs, Pack Operation)
- i. Switches (Toggle vs. Push Button)
- j. Gauges (Round Dial or Digital)
- k. Navigation/communication (GPS, FMS, HF, EFB, etc.)



27.1.5 QUALIFICATIONS OF INSTRUCTORS & DESIGNATED CHECK PILOTS

- 27.1.5.1 Who is providing the Simulator Instructor/Designated Check Pilots?
- Regardless of which, what is this individual's qualification/medical certificate, currency, experience, etc. (resume provided)?
 - If not provided by the Sri Lanka applicant, what method was used for this individual to become familiar with the Sri Lanka aircraft operator's procedures/checklists/abnormal/training and checking programmes/etc?
 - If not provided by the Sri Lanka aircraft operator, is this individual able to accurately communicate with the trainees.

27.1.6 SOPS & CHECKLISTS TO BE USED

- 27.1.6.1 Are the crews and their instructors utilizing their Sri Lanka company manuals (standard operating procedures and checklists) or are these provided by the simulator provider?
- 27.1.6.2 Only in very unusual situation would the SOPs and checklists of the training provider be permitted for use by the crews of the aircraft operator.

27.2 SIMULATOR EVALUATION BY THE CAASL-FS

- 27.2.1 The approving inspector must be allowed to operate the simulator through a series of approaches/manoeuvres to determine if all systems operate normally
- 27.2.2 Depending upon the inspector's intimacy with a particular simulator, it might require performing a "hands on demonstration" of the type normally performed by a CAASL-FS aircraft type qualified crewmember when determining the simulator authorizations for initial and recurrent qualification.
- 27.2.3 Depending on how comfortable the Inspector is with the noted differences, discrepancies, and performance, would impact just how thorough such a fly-off would be.
- 27.2.4 The specific use of the simulator should be carefully specified. Some examples of specific application areas and their corresponding "sub areas of interest" would be—

27.2.5 PERMITTED INITIAL AIRCRAFT TRAINING/CHECKING

- 27.2.5.1 The following are types of authorizations that may be issued by the FS. if the necessary evaluation is satisfactory —
- Aircraft Type Rating
 - Initial Aircraft Qualification (Co-pilot, Engineer)
 - Requalification Training
 - Credit for landings (No/Partial Flap, Visual, Engine Inoperative, Two Engine Inoperative, Three Engine Inoperative)
 - Circling approach capable

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- f. Non Precision Approaches (NDB, LOC, VOR, VOR/DME, FMS, etc.)
- g. Taxi Capability
- h. Aircraft performance during Stalls, Steep Turns, Engine failures prior to & after V1, Windshear, Turbulence
- i. Navigation capability (FMS, GPS, INS, etc.)
- j. Significant aircraft differences?

27.2.6 PERMITTED RECURRENT TRAINING/CHECKING

27.2.6.1 If an evaluation finds that the simulator may be used in lieu of the aircraft to qualify crews for the following listed items, the aircraft operator may be issued the following specific authorizations for recurrent training and checking—

- a. Proficiency Checks (Pilots/Flight Engineers)
- b. Credit for landings (No/Partial Flap, Visual, Engine Inoperative, Two Engine Inoperative, Three Engine Inoperative)
- c. Circling approach capable
- d. Taxi Capability
- e. Low Departure Minimums Capable
- f. Low Precision Approach Capable
- g. Cat II Capable
- h. Cat III/A/B/C Capable
- i. ASR/PAR Approaches (Radar) Capable
- j. Navigation/Route Training/Checking capable? (FMS, GPS, INS, etc.)
- k. Significant aircraft differences

27.2.7 REGAINING APPROACH/LANDING CURRENCY

27.2.7.1 If an evaluation finds that the simulator may be used in lieu of the aircraft to re-qualify crews for approach and/or landing currency, the aircraft operator may be authorized to use it for—

- a. Credit for landings, and
- b. Airports/approach capability.

27.2.8 RESTRICTED/SPECIAL AIRPORT QUALIFICATION/CURRENCY

27.2.8.1 If an evaluation finds that the simulator has the capability to be used for qualifying crews for operations into restricted or special airports, the aircraft operator may be authorized to use the simulator for that purpose.



27.2.8.2 The specific airport must be identified in the authorization.

27.2.9 LOFT CAPABLE

27.2.9.1 If an evaluation finds that the simulator has the capability to support a line orientated training curriculum, the aircraft operator may be authorized to use it for that purpose.

27.2.9.2 The specific approved curriculums must be identified in the authorization.

27.2.10 INSTRUCTOR / CHECK PILOT TRAINING

27.2.10.1 If an evaluation finds that the simulator has the capability to accurately simulate the aircraft manoeuvres and procedures specified for aircraft type instructor and check pilot curriculums, the aircraft operator may be authorized to use it for that purpose.

27.2.10.2 The specific curriculums must be identified in the authorization.

27.3 APPLICATION FOR FLIGHT SIMULATOR APPROVAL

27.3.1 APPLICABLE REGULATIONS

27.3.2 APPLYING FOR THE APPROVAL

27.3.2.1 To take advantage of these provisions, the certificate holder must request approval of the simulator or other training device in writing, specifying the intended application.

27.3.2.2 CAASL-FS inspectors will then evaluate the simulator with respect to its intended use and commonality with the certificate holder's airplane.

27.3.2.3 If they determine that it is satisfactory for the application intended, CAASL-FS will issue a letter to the certificate holder specifying the applications for which the simulator may be used.

27.3.3 OWNERSHIP

27.3.3.1 The certificate holder does not have to own or otherwise have physical possession of the simulator. As long as it has been evaluated and approved specifically for the use of the certificate holder, it may be owned and operated by another organization.

27.3.3.2 However, in order to request approval for use of a simulator by a Sri Lanka aircraft operator, it must have a current initial Qualification Test Guide (QTG) and recurrent approved Master Qualification Test Guide (MATG).

27.3.3.3 It will be the certificate holder's responsibility to assure that the simulator continues to meet the standards and applications originally approved. If CAASL-FS determines that the basis for original approval is degraded, the approval will be immediately withdrawn.

27.4 CONTENTS OF SIMULATION APPROVAL REQUEST

27.4.1 The operator should submit a cover letter and an ATG which includes—

27.4.1.1 A title page with the operator and CAASL approval signature blocks.

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27.4.1.2 A simulator information page, for each configuration in the case of convertible simulators, providing—

- a. The operator's simulator identification number or code.
- b. Airplane model and series being simulated.
- c. Aerodynamic data revision.
- d. Engine model and its data revision.
- e. Flight control data revision.
- f. Flight Management System identification and revision level.
- g. Simulator model and manufacturer.
- h. Date of simulator manufacture.
- i. Simulator computer identification.
- j. Visual system model and manufacturer.
- k. Motion system type and manufacturer.
- l. Table of contents.
- m. Log of revision and/or list of effective pages.
- n. Listing of all reference source data.
- o. Glossary of terms and symbols used.

27.5 PROCEDURE FOR CAASL-FS EVALUATION & APPROVAL

27.5.1 When the inspector receives a letter of request from an aircraft operator engaged general aviation aerial work or commercial air transport operations, that inspector should use the approved checklist of the CAASL to conduct the evaluation.

27.5.2 REVIEW APPLICATION DOCUMENTS

27.5.2.1 The evaluating inspector should review the contents of the aircraft operator's application—

- a. Review the letter of request, the ATG and the MATG.
- b. Contact the issuing CAA to determine that the documents are accurate and the most current.
- c. Review the ATG and MATG to determine that the simulator is suitable for the aircraft operator's training programme.

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- d. Review the detailed layouts of the aircraft operator's cockpit for the requested aircraft for later comparison with the simulator.

27.5.3 CONTACT SIMULATOR PROVIDER

27.5.3.1 The evaluating inspector should make arrangements for the evaluation—

- a. Contact the organization owning/operating the simulator and make arrangements for an inspection.
- b. Ensure that a qualified simulator instructor will be available to support the inspection.
- c. Make arrangements to travel to the simulator.

27.5.4 GENERAL INSPECTION OF SIMULATOR

27.5.4.1 Before the fly-off inspection, the evaluating inspector should determine whether the air

- a. Inspect the simulator's maintenance records to determine if there is a history of recurring failures.
- b. Visually inspect the simulator for overall condition and cleanliness.
- c. Visually inspect the simulator using the aircraft operator's cockpit layouts to determine if the configuration matches the operator's aircraft.
- d. Ensure that the simulator's parameters are set to match the make, model, and series of the operator's aircraft. Note any differences.
- e. If there are differences, do not issue a Letter of Authorization (LOA) until a suitable differences programme is developed.
- f. Review the aircraft operator's approved training manual to confirm that all requested manoeuvres can be performed, including visuals.
- g. If a satisfactory difference program has not been developed, a letter of denial shall be issued.

27.5.5 CONDUCT FLY-OFF EVALUATION

27.5.5.1 The evaluating inspector will, with the assistance of the qualified simulator inspector, perform the fly-off evaluation as per the CAASL checklist.

- a. Operate the simulator through a series of approaches/manoeuvres as necessary to establish to determine if all systems appear to be operating normally.
- b. Ensure that the simulator is capable of critical events included in the checklist.



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- c. If malfunctions are found determine why they have not been documented and corrected.

27.5.6 ISSUE LOA & COMPLETE FS ADMINISTRATIVE TASKS.

27.5.6.1 If the simulator is found to be acceptable, issue the LOA.

- a. If the simulator is not acceptable issue a letter of denial detailing the basis for denial.
- b. Complete the appropriate CASORT-Action and ORG entries
- c. Update the aircraft operator's operations specifications.



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APPENDIX 27-A CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Evaluate Simulator Training & Checking Checklist/Report CAA/OP/CL/065

Evaluate Simulator Training & Checking

Date		Control #	
Inspector		Organization	
Location		PIC #	
Destination		Other PEL#	

Y = YES

N = NO

NS = NOT SEEN

NA = NOT APPLICABLE

Check YES column if you reviewed the record, procedure or event and have no comment
Check NO column if you reviewed the record, procedure or event and have a comment
Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment
Check NOT APPLICABLE column if the line item is not required in this particular Operator
Make notes regarding a NO answer for resolution

YES	NO	NS	NA	1	PROCESSING OF REQUEST
				1.1	Were the request documentation contents satisfactory?
				1.2	Was the FAA ATG and MATG Current? (FAA Approval)
				1.3	Was the JAA TG and MTG Current? (EASA Approval)
				1.4	Was the other CAA TG and MTG Current? CAA ID _____
				1.5	Was the approving CAA contacted to confirm currency of approval? Phone Number: _____
				1.6	Is the simulator to be used for takeoff and landing qualification?
				1.7	Is the simulator to be used for LOFT training?
				1.8	Is the simulator to be used for Category III approach training and checking?
				1.9	Is the simulator to be used for ETOPS training and checking?
YES	NO	NS	NA	2	SIMULATOR MAINTENANCE ARRANGEMENTS
				2.1	Is the daily pre-flight documentation easily accessible for review?
				2.2	The simulator's maintenance records do NOT show a pattern of recurring failures?
				2.3	Does the simulator owner provide adequate personnel to correct simulator deficiencies during the periods of time the operator's personnel will be engaged in simulator training and checking?
YES	NO	NS	NA	3	SIMULATOR TESTING PROVISIONS



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				3.1	Is there a means for quickly and effectively testing simulator programming and hardware?
				3.2	Is there documentation that the control feel dynamics and relative integrated sensory cues were tested in the last CAA approval?
				3.3	Is there a means of recording the visual response time for visual systems?
				3.4	Were the demonstration of surface resolution confirmed by calculations in the statement of compliance?
				3.5	Do the test procedures confirm that the visual system colour, RVR, focus, intensity, level horizon, and attitude adequately replicate those experienced during operation of the aircraft?
				3.6	Did the visual system meet all standards during the validation of functions and subjective tests?
YES	NO	NS	NA	4	GENERAL IMPRESSION OF SIMULATOR
				4.1	Is the overall condition and cleanliness of simulator acceptable?
				4.2	Does the simulator cockpit consist of all the aircraft cockpit space forward of a cross section of the fuselage?
				4.3	Are the required crew member duty stations and required bulkheads aft of the pilots' seats, (considered part of the cockpit) a replication of the flight deck of the operator's aircraft?
				4.4	Are there observer seats available for the check airman/examiner and inspector?
				4.5	Are the instructor controls adequate to control all required system variables and insert abnormal or emergency conditions necessary for the prescribed procedures and manoeuvres?
YES	NO	NS	NA	5	COMPARISON TO OPERATOR'S AIRCRAFT
				5.1	Is the simulator cockpit a full scale replica of the operators' aircraft cockpit?
				5.2	Does the simulator replicate the actual instrumentation and switch location of the operator's aircraft?
				5.3	Are the direction of movement of control and switches identical to that in the aircraft?
				5.4	Are circuit breakers properly located and functionally accurate?
				5.5	Are all differences identified and acceptable?
YES	NO	NS	NA	6	PRE-START & GROUND OPERATIONS
				6.1	Cockpit preparation checklist accomplished with normal check indications?
				6.3	Start checklist accomplished with normal start indications?
				6.4	Representative sample of abnormalities possible using instructor control panel?
				6.5	Taxi for takeoff in visual conditions adequately simulated and possible?
				6.6	If low visibility taxi operations, taxi for takeoff in low RVR adequately simulated and possible, including taxiway lighting and markings?
				6.7	Pre-takeoff checklist accomplished with realistic indications?
YES	NO	NS	NA	7	TAKEOFF & CLIMB OPERATIONS
				7.1	Normal maximum gross weight takeoff realistically simulated?



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				7.2	Normal visual takeoff with maximum cross-wind component realistically simulated?
				7.3	Low visibility (minimum RVR approved for operator) maximum gross weight takeoff realistically simulated, including visual cues?
				7.4	Low visibility (minimum RVR approved for operator) maximum gross weight abort just prior to V1 realistically simulated, including visual cues?
				7.5	Low visibility (minimum RVR approved for operator) maximum gross weight takeoff with engine failure at V1 and climb profile realistically simulated, including visual cues?
YES	NO	NS	NA	8	INFLIGHT MANUEVERS
				8.1	Warnings for approach to stall in a climb configuration conform to the expected sequence and approximate airspeeds, with realistic recovery profile possible?
				8.2	Warnings for approach to stall in a landing configuration conform to the expected sequence and approximate airspeeds, with realistic recovery profile possible?
				8.3	Wind shear profiles provide realistic indications, with escape configuration possible?
				8.4	Steep turns are possible, with realistic power and attitude configurations?
				8.5	Engine-out drift-down and level flight possible in conformance with published performance for weight, temperature and altitude?
				8.6	Navigation simulation appropriate to the type of navigation and RNP Requirements?
				8.7	If approved for ETOPS route checking, the necessary route and alternate possibilities are included in simulator software?
YES	NO	NS	NA	9	VISUAL AND INSTRUMENT APPROACHES
				9.1	Manoeuvring for landing in visual conditions provide adequate visual cues?
				9.2	Category I precision approach can be made to prescribed minimums
				9.3	Engine-out Category I precision approach can be made to prescribed minimums
				9.4	If approved for the operator, Category II precision approach can be made to prescribed minimums
				9.5	If approved for the operator, Category III precision approach can be made to prescribed minimums?
				9.6	Non-precision approaches (approved for the operator) are possible using nav-aids available in the simulator.
				9.7	Precision approach visual references necessary to land (from lowest approved visibility) are adequate for landing from DH. (Freeze simulator at DH and review)
				9.8	Non-precision visual references necessary to land (from lowest approved visibility) are adequate for landing from MDA. (Freeze simulator at MDA and distance and review)
				9.9	Circle-to-land manoeuvring possible from an instrument approach using visual references. (Freeze simulator prior to turning final and review)
YES	NO	NS	NA	10	LANDING & TAXING TO GATE
				10.1	Visual landing from DH possible using visual cues and procedures



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				10.2	Rejected landing just prior to touchdown requires realistic configuration and thrust settings for proper completion?
				10.3	Landing in visual conditions with maximum cross-wind component provides realistic approach and landing requirements?
				10.4	Engine-out landing from a Category 1 precision approach can be completed in accordance with profile?
				10.5	If approved for the operator, Category II or III hand-flown touch- down and rollout realistically possible with visual cues?
				10.6	If approved for the operator, Category III auto land functions properly throughout the touchdown and rollout with landing?
				10.7	Taxi to the gate possible in visual conditions?
				10.8	If approved for operator, taxi to the gate possible in lowest visibility minima approved?
YES	NO	NS	NA	11	ABNORMAL AND EMERGENCY EVENT REPLICATION
				11.1	All planned abnormal indications can be realistically simulated?
				11.2	Completion of all planned abnormal procedures can be accomplished?
				11.3	All emergencies can be realistically simulated?
				11.4	Completion of all emergency procedures can be accomplished?
YES	NO	NS	NA	12	REPLICATION OF AERODYNAMIC CONTROL FORCES
				12.1	Do the control forces and control travel replicate those of the opera- tor's aircraft?
				12.2	Do the relevant instrument indications replicate those experienced in the operator's aircraft respond correctly to control movement by crew or induced disturbance to the simulated aircraft: e.g. turbulence or wind shear?
				12.3	Do the effects of aerodynamic changes for various combination of drag and thrust replicate those normally experienced in the opera- tor's aircraft during flight?
				12.4	Are the effects of change in aircraft attitude, thrust, drag, altitude, temperature, gross weight, centre of gravity location, and configuration adequately replicated?
YES	NO	NS	NA	13	REPLICATION OF SYSTEMS/PROCEDURES
				13.1	Do the communications, navigation and caution and warning equipment correspond to that installed in the operator's aircraft?
				13.2	Do the simulator systems replicate applicable aircraft system operation both on the ground and in flight?
				13.3	Is it possible to accomplish all normal, abnormal and emergency procedures as specified in the operator's aircraft and training documentation?
YES	NO	NS	NA	14	REPLICATION OF SENSORY PERCEPTIONS
				14.1	Are the sounds and aircraft noise perceptible to the pilot during ground and flight operations of the operator's aircraft replicated accurately?
				14.2	Do the cockpit sounds which result from pilot actions replicate those experienced in the operator's aircraft?
YES	NO	NS	NA	15	REPLICATION OF AIRCRAFT MOTION
				15.1	Do the motion cues e.g. touchdown cues a function of the simulated rate of descent?



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				15.2	Do the touchdown cues correspond to the rate of descent?
YES	NO	NS	NA	16	REPLICATION OF VISUAL CUES
				16.1	Continuous minimum collimated visual field-of-view as specified.
				16.2	Verification of visual ground segment and visual scene content at a decision height on landing approach.
				16.3	Do the visual cues adequately replicate deck angle and sink rate required for depth perception during take offs and landings
				16.4	Dusk scene to enable identification of visible horizon and terrain characteristics.
				16.5	Visual landing cues for daylight, dusk and night adequate for recognition of airport, terrain and major landmarks and accomplishment of landing.
YES	NO	NS	NA	17	AVAILABLE OPERATOR DOCUMENTATION
				17.1	Is the operator's approved condensed checklist available for use during training and checking activities in the simulator?
				17.2	Is the operator's quick reference abnormal and emergency checklist available for use during training and checking activities in the simulator?
				17.3	Is the operator's aircraft operating manual containing expanded normal, abnormal and emergency procedures and aircraft limitations available for use during training and checking activities in the simulator?
				17.4	Is the operator's manual for aircraft systems function and operation available for use during training and checking activities in the simulator?
				17.5	Is the operator's manual for runways analysis and aircraft performance available for use during training and checking activities in the simulator?
				17.6	Is the operator's approved minimum equipment list available for use during training and checking activities in the simulator?
				17.7	Are the operator's instrument departure, en-route and approach charts available for use during training and checking activities in the simulator?
YES	NO	NS	NA	18	ARRANGEMENTS FOR INSTRUCTOR/CHECK PERSONNEL
				18.1	Have the operator's training and checking personnel been trained on the use of the simulator to adequately recreate required scenarios?
				18.2	If training instructors are provided by simulator operator, are there records of the training of these persons?
				18.3	If checking personnel are provided by simulator operator, are there records of the orientation of these persons by the Authority?
				18.4	Does the simulator control panel allow the instructor/check airman to conduct realistic scenarios of flight with this simulator?
				18.5	Does instructor has developed lesson plans and scenarios for the accomplishment of the training with this simulator?
				18.6	Does instructor have developed lesson plans for realistic LOFT scenarios that provide for a normal line flight operation of the aircraft?
				18.7	Does designated check airman/examiner have developed realistic real-time proficiency check scenarios that provide for all required check events and manoeuvres to be accomplished in reasonable time?



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INSPECTOR SIGNATURE		ORG REP SIGNATURE	
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Chapter 28 - PROFICIENCY & COMPETENCY CHECKS

28.1 OBJECTIVES OF PROFICIENCY & COMPETENCY CHECK INSPECTIONS

28.1.1 The surveillance of an operator's proficiency and competency checks provides the CAASL FSD with information about the effectiveness of the operator's training and qualification programmes.

28.1.2 The objectives of a FOI or an inspector conducting a proficiency or competency check inspection are as follows—

- a. To evaluate individual airmen performing their duties and responsibilities
- b. To evaluate individual check pilots performing their duties and responsibilities
- c. To assess the effectiveness of the operator's training programme
- d. To identify operational procedures, manuals, or checklists which are deficient
- e. To assess the effectiveness of the operator's simulators and equipment
- f. To evaluate the effectiveness of the operator's trend analysis, standardization, and quality control programme

28.2 CHECK PILOT PROGRAMMES

28.2.1 AOC holders are required to establish a check pilot programme for conducting the proficiency and competency checks required by the ANR 216 have the surveillance responsibility for an operator's check pilot programme.

28.2.2 This function can be accomplished directly for small operators and indirectly through coordination with other inspectors for large, complex operators. FOIs or their representatives are authorised to observe these checks at any time as a check pilot surveillance job function and if aircraft qualified to administer proficiency and competency checks.

28.3 PROFICIENCY & COMPETENCY CHECK INSPECTION PROCEDURES

28.3.1 Before conducting a proficiency and competency check inspection, inspectors must become thoroughly familiar with the operator's manuals. Inspectors may also be required to qualify in the operation of the aircraft, simulators, or training devices.

28.3.2 AREAS OF FAMILIARIZATION

28.3.2.1 Inspectors must be familiar with the following areas before conducting proficiency and competency check inspections—

- a. Inspector, safety pilot, and crew qualification for simulators, flight training devices, and aircraft
- b. Acceptable methods for presenting the manoeuvres and events of the check in simulators, flight training devices, and aircraft



- c. Acceptable standards of performance for proficiency and competency checks.

28.3.3 INSPECTION AREAS

28.3.3.1 Inspectors should use the following guidance pertaining to specific inspection areas during a proficiency or competency inspection:

28.3.3.2 Pilot Competency

- a. This inspection area applies to the knowledge, ability and proficiency of the pilot receiving the check.
- b. A pilot must perform specific events in an aircraft, an aircraft simulator, a flight training device, or a combination thereof, during a proficiency or competency check.
- c. Through observation of the check ride, the inspector can determine if the pilot has an acceptable level of aircraft systems knowledge and is competent in the performance of normal, abnormal, and emergency flight procedures.
- d. In addition, the inspector can observe whether the pilot complies with company policy, possesses current manuals, and possesses appropriate certificates and ratings.
- e. The check pilot must use the CAASL-FSD AOC Proficiency Check Form to record the check, unless the CAASL-FSSD has approved a different form for the company.

28.3.3.3 Check Pilot Competency

- a. The FOI or a qualified representative must periodically observe company check pilot conducting proficiency or competency checks.
- b. These observations enable the FOI to evaluate both the individual check pilot performing check pilot duties and the company's entire check pilot programme.
- c. This inspection area applies to the manner in which a check pilot conducts the check, the accuracy and completeness of the check pilot's observations, and the validity of the outcome.

28.4 EVALUATION OF CHECK PILOT /DESIGNATED CHECK PILOT

28.4.1 Inspectors should evaluate the following areas when determining a check pilot's competency—

28.4.2 RESPONSIBILITIES

28.4.2.1 The check pilot is responsible for: ensuring that all required flight test events are completed in a realistic flight scenario; providing adequate pre-flight and post flight briefings for the pilot being checked, and objectively evaluating the pilot's performance.

28.4.2.2 An evaluation of the check pilot's ability to actually perform the flight events of the proficiency or competency check is not normally part of a check pilot inspection.



28.4.2.3 FOIs must place emphasis on the competence of each check pilot as an examiner.

28.4.3 QUALIFICATION

28.4.3.1 A check pilot must maintain basic qualification in the duty position in accordance with SLCAP 4205.

28.4.3.2 Should a question concerning the check pilot's basic pilot or flight engineer qualifications arise, a separate inspection must be conducted to evaluate the pilot's basic skills.

28.4.4 TRACKING

28.4.4.1 Through the Action system, FOIs must track and manage check pilot inspections. Before designation, each check pilot must be observed performing those duties which will be authorised after designation.

28.4.4.2 After approval, and when resources permit, each check pilot shall be observed annually. When resources do not permit annual observations, observations shall be conducted as frequently as possible.

28.4.4.3 Priority should be placed on observing those check pilots who have not been observed for the longest period of time.

28.4.4.4 FOIs should work closely with the aircraft-specific qualified inspectors to ensure the organization database contains current information. It is the FOIs responsibility to ensure that the check pilot's organization database file is current.

28.5 EVALUATION OF THE OPERATOR'S TRAINING PROGRAMME

28.5.1 The analysis of proficiency or competency check inspection results is an excellent means for a FOI to ensure the continued effectiveness of an operator's training programme.

28.5.2 The Action report provides a standardized way for FOIs to collect and retrieve inspection results.

28.5.3 When deficient areas are identified through the Safety Issue Resolution system, the areas should be rectified by changes in the operator's training programme.

28.5.3.1 For example, if inspection comments repeatedly indicate deficiencies in the area of non-precision approaches, the FOI should require the operator to emphasize that event in the operator's flight training curriculum segments.

28.6 MANUALS, PROCEDURES, AND CHECKLISTS

28.6.1 Inspectors can use the data from proficiency or competency checks, combined with data from other inspections (such as cockpit, en-route, and ramp inspections), to identify deficiencies in manuals, procedures, or checklists previously approved or accepted by the CAASL-FSSD.



28.6.2 Checklist procedures, MEL/CDL procedures, and specific flight manoeuvres and procedures are operational areas that may require change to ensure compliance with the ANR or safe operating practices.

28.6.3 EQUIPMENT

28.6.3.1 This inspection area refers to the condition of the aircraft, simulators, or training devices used during the check. When evaluating the equipment, inspectors should determine the following—

- a. Whether the required inspections have been conducted
- d. Whether the observed discrepancies were recorded on maintenance logs
- c. Whether the equipment is in an adequate state of repair
- d. Whether the equipment operates properly

28.6.4 EFFECTIVENESS OF SAFETY AUDIT PROGRAMME

28.6.4.1 FOIs must evaluate the effectiveness of an operator's trend analysis, standardization, and quality control programme.

28.6.4.2 Operators should collect, record, and analyse the results from proficiency and competency checks to detect and correct deficiencies in training programmes, procedures, and checklists.

28.6.4.3 FOIs shall encourage operators with more than 10 crewmembers in any duty position to establish trend analysis.

28.6.4.4 Inspectors conducting a series of proficiency and competency checks will, over time, observe changes being made by the operator.

28.7 INSPECTOR RESPONSIBILITIES DURING CHECK PILOT OBSERVATIONS

28.7.1 When a proficiency check or competency check is conducted by a company check pilot and observed by an inspector, the inspector should evaluate both the pilot being checked and the competency of the check pilot administering the check.

28.7.2 The check pilot is responsible for completing all required checking events, for providing suitable briefings before and after the session, and for fairly and objectively evaluating the pilot being checked.

28.7.3 After the check is completed, the inspector is responsible for debriefing the check pilot and the pilot being checked (should the check pilot's debriefing be inadequate).

28.7.4 The inspector's primary responsibility is to observe and evaluate the overall conduct of the check.

28.7.5 The inspector must refrain from asking questions of the pilot being checked, attempting to control the type or sequence of checking events, and from interfering in any way with the manner in which the check pilot conducts the check.



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- 28.7.6 It is the check pilot's responsibility to conduct a complete and proper check. The inspector's responsibility is to evaluate the performance of both the pilot being checked and the check pilot and to properly record the inspection results.
- 28.7.7 Should the check pilot's performance be unsatisfactory, the inspector shall inform the FOI using the most expeditious means available.
- 28.7.8 Should the check pilot fail to complete all required items on a check (which has been satisfactory to that point), the inspector shall bring this fact to the attention of the check pilot and ensure that all events are completed.
- 28.7.9 Equipment malfunctions that have an effect on the outcome or the check should be recorded.
- 28.7.10 The proper method is to initiate a simulator evaluation Action report and include the malfunctions as a safety issue in that report.

28.8 DEFICIENCIES

- 28.8.1 While certain training benefits are gained during proficiency or competency checks, the purpose of a check is to have the pilot's state of proficiency evaluated and to ensure that the last training conducted was sufficient to ensure the pilot's proficiency throughout the interim period.
- 28.8.2 If the check pilot conducting the check observes minor deficiencies (and believes that minor instruction may correct the situation) the check pilot may suspend the check temporarily, conduct remedial training, and then resume the check.

28.8.3 REPEATING EVENTS

- 28.8.3.1 Check pilot are authorised to repeat an event if the pilot's first performance is questionable.
- In this case, only one repeat of a questionable event is authorised during the check.
 - Problems have occurred in instances where check pilots have merely repeated events until the pilot performed those events within tolerances. This practice is not acceptable and is an abuse of the authority to repeat.
 - All satisfactory manoeuvres must occur during the single check. It is contrary to regulations to continue checks for several sessions.
 - A record must be made of the pilot's unsatisfactory performance. This provides important data about the effectiveness of the training programme and the need for additional training was lost.
 - When conducting training-to-proficiency each event must be satisfactory during the training period.

28.8.4 UNSATISFACTORY PERFORMANCE

- 28.8.4.1 Inspectors shall not conduct pilot training during proficiency or competency checks.

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28.8.4.2 If an event is unsuccessful, the inspector should complete as much of the remaining flight events as possible or terminate the check. The check must be recorded as unsatisfactory.

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APPENDIX 28-A

CIVIL AVIATION AUTHORITY OF SRI LANKA Air Operator Pilot/FE Proficiency Check Report

S=Satisfactory; U=Unsatisfactory; N= Not Observed; NA= Not Applicable
AC (column) =manoeuvre graded in aircraft; SIM (column) = Manoeuvre graded in simulator
CAA/OP/CL/067

Company	Date	Base	Aircraft Type	Simulator Type
Airman's Name	Check Pilots Name	SIM Time	Aircraft Time	Inspector

1. PILOT COMPETENCY			AC	SIM	LANDINGS	AC	SIM	
A.		License			Normal			Fuel System management
		Currency of Manuals			From ILS Approach			Air Conditioning and Pressurization Control
		Equipment Examination			Crosswind			Engine Fire Control
B	AC	SIM			With Simulated Power plant Failure NDB E/O			Emergency Gear and Flap Extension
		Pre-flight Inspection			Rejected (Briefed)			Cargo Compartment Fire
		Taxiing			From Circling Approach			Smoke Evacuation
		Power plant Check	AC	SIM	OTHER			Rapid Pressurization Loss
	AC	SIM			Emergency Procedures			Fuel Dumping
		Normal			Judgment			De-icing and Anti-icing
		Instrument & E/O			Crew Coordination			Use of Emergency Equipment
		Crosswind	B. FLIGHT ENGINEER COMPETENCY					Other emergency Procedures
		Rejected (Briefed)			License			Crew Coordination
	AC	SIM			Currency of Manuals	C. OTHER		
		INSTRUMENT PROCEDURES			Equipment Examination			Content of Check
		Area Departure	AC	SIM				Check Airman Competency
		Holding			Pre-flight Check			Manuals Procedures, and Checklist
		Area Arrival			Computation of Fuel Load and Fuel Loading Procedure			
B.		ILS Approach Radar Vector						



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					Computation of Company Forms			Flight Simulator and Training Equipment
		Other Instrument Approaches NDB E/O			Engine Start			
					Procedures during taxi			
AC	SIM	IN-FLIGHT MANEUVERS			Power plant check			
		Steep Turns			Cruise Control			
		Approaches to Stalls			Power plant Operation			
		Specific Flight Characteristic						

REMARKS:

OVERAL RESULT: ☐ Satisfactory
☐ Unsatisfactory

INSPECTOR'S SIGNATURE



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Chapter 29 - REDUCED VERTICAL SEPARATION MINIMA (RVSM)

29.1 GENERAL

29.1.1 This chapter contains the criteria to be used by the CAASL-FS when asked to approve an AOC holder's request to use RVSM airspace. RVSM airspace is being implemented worldwide and international convention requires AOC holders to obtain approval from their CAASL-FS before conducting any operations within this airspace.

29.1.2 The criteria used to obtain approval are developed from ICAO and Sri Lankan guidance material; specifically—

- a. ICAO's *Manual on Implementation of a 300 m (1000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive* (Doc 9574-AN/934) and

29.1.3 When applying, the AOC holder must list the aircraft by type and series. If aircraft of the same type/series are equipped with different altimetry system configurations, they should be listed by the aircraft registration or serial number.

29.1.4 When the criteria for approval are met, Section H of the operations specifications (AOC holder) will be reissued or a LOA (General Aviation) will be issued. If an operator has aircraft that are capable of flying within RVSM airspace but does not intend to operate there, they should not be issued an authorization.

29.2 APPROVAL PROCESS

29.2.1 GENERAL

29.2.1.1 Airspace where RVSM is applied is considered to be special qualification airspace. Both the individual operator and the specific aircraft type or types which the AOC holder intends to use must be approved by the CAASL-FS before the operator conducts flight in RVSM airspace.

29.2.1.2 In addition to CAASL-FS approval, the aircraft must undergo height monitoring by a height monitoring unit (HMU) or GPS monitoring unit (GMU) to confirm the aircraft meets RVSM performance criteria before operational approval is given.

29.2.1.3 Finally, the CAASL-FS must record the relevant information in a RVSM database for each aircraft approved and provide this database to the organization responsible for the RVSM airspace in question.

29.2.2 AIRCRAFT APPROVAL

29.2.2.1 Each aircraft type that an AOC holder intends to use in RVSM airspace should have received airworthiness approval in accordance with the criteria provided in Doc 9574 and the SLCAP 6100.

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29.2.2.2 Individuals or AOC holders seeking approval for its aircraft should contact the manufacturer of the specific aircraft type and apply to the CAASL-FS to determine/co-ordinate the process.

29.2.3 OPERATIONAL APPROVAL

29.2.3.1 This section is intended to provide detailed guidance on the content of operational programme, practices and procedures that an AOC holder should follow to receive approval to operate an aircraft in RVSM airspace.

29.2.3.2 It also describes specifically the steps in the process: application for CAASL-FS evaluation and granting of approval to operate.

29.2.4 GENERAL

29.2.4.1 The CAASL-FS should ensure that each AOC holder can maintain high levels of height-keeping performance. It should be satisfied those operational programmes are adequate for each AOC holder.

29.2.4.2 Operations and training manuals as well as flight crew training should be evaluated.

29.2.5 PRE-APPLICATION MEETING

29.2.5.1 A pre-application meeting should be scheduled between the AOC holder and the CAASL-FS to inform the operator of CAASL-FS expectations regarding the approval process to operate in a RVSM environment.

29.2.5.2 The content of the operator RVSM application, CAASL-FS review and evaluation of the application, validation flight and conditions for removal of RVSM authority should be basic items of discussion.

29.3. CONTENT OF OPERATOR RVSM APPLICATION

29.3.1 The following paragraphs describe the material that an operator applying for RVSM authority should provide to the CAASL-FS for review and evaluation at least 60 days prior to the intended start of RVSM operations.

29.3.2 AIRWORTHINESS DOCUMENTS & MAINTENANCE PROGRAMME

- a. Sufficient documentation should be available to show that the aircraft and maintenance programme has been approved in accordance with the CAASL-FS Airworthiness Inspector Manual.

29.3.3 DESCRIPTION OF AIRCRAFT EQUIPMENT

- a. The applicant should provide a configuration list that details all components and equipment relevant to RVSM operations.



29.3.4 AIRCRAFT INFORMATION

- a. The applicant shall complete a Technical Data Sheet for each aircraft to be approved for RVSM operations and submit all sheets with the application.

29.3.5 OPERATIONS MANUALS & CHECKLISTS

- a. The appropriate manuals and checklists should be revised to include information/guidance on standard operating procedures. The SOPs are to include ACAS considerations when in level flight, climbing or descending in RVSM airspace.
- b. Appropriate manuals should also include a statement of the airspeeds, altitudes and weights considered in RVSM aircraft approval to include identification of any operating restrictions established for that aircraft group.
- c. For example, when an aircraft is restricted from conducting RVSM operations in areas of the full RVSM envelope where the value of mean ASE exceeds 120 ft (37 m) and/or the absolute value of mean ASE plus three standard deviations of ASE exceed 245 ft (75 m). When such a restriction is established, it should be identified in the data package and documented in appropriate aircraft operating manuals; however, visual or aural warning/indication systems should not be required to be installed on the aircraft.

29.3.6 OPERATIONS TRAINING PROGRAMME & OPERATING PRACTICES & PROCEDURES

- a. AOC holders shall submit training syllabi and other appropriate material to the CAASL-FS to show that the operating practices, procedures and training items related to RVSM operations are incorporated in initial and, where warranted, recurrent training programme.
- b. Training for dispatchers shall also be included where appropriate.
- c. General Aviation operators shall demonstrate to the CAASL-FS through oral or written tests that their knowledge of RVSM operating practices and procedures is equivalent to AOC holders and is sufficient to warrant granting of approval to conduct RVSM operations.
- d. Practices and procedures in flight planning, aircraft pre-flight procedures for each flight, procedures prior to RVSM airspace entry, in-flight procedures and flight crew training procedures should be standardized.

29.4 OPERATING PRACTICES & PROCEDURES

29.4.1 GENERAL

- a. The following has been written for use by a wide variety of operator types and therefore, certain items have been included for purposes of readability and completeness.

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29.4.2 FLIGHT PLANNING

- a. During flight planning the flight crew should pay particular attention to conditions which may affect operation in RVSM airspace. These include, but may not be limited to
 - a. Verifying that the aircraft is approved for RVSM operations;
 - b. Reported and forecast weather conditions on the route of flight;
 - c. Minimum equipment requirements pertaining to height-keeping systems; and
 - d. If required for the specific aircraft group, accounting for any aircraft operating restriction related to
 - e. RVSM airworthiness approval.

29.4.3 AIRCRAFT PRE-FLIGHT PROCEDURES FOR EACH FLIGHT

- a. The following actions should be accomplished during pre-flight—
 - a. Review maintenance logs and forms to ascertain the condition of equipment required for flight in RVSM airspace. Ensure that maintenance action has been taken to correct defects to required equipment;
 - b. During the external inspection of aircraft, particular attention should be paid to the condition of static sources and the condition of the fuselage skin in the vicinity of each static source and any other component that affects altimetry system accuracy (this check may be accomplished by a qualified and authorised person other than the pilot; e.g., a flight engineer or maintenance personnel);
 - c. Before takeoff, the aircraft altimeters should be set to the local altimeter (QNH) setting and should display a known elevation (e.g. field elevation) within the limits specified in aircraft operating manuals. The two primary altimeters should also agree within the limits specified by the aircraft operating manual. An alternative procedure using QFE may also be used;
 - d. Before take-off, the equipment required for flight in RVSM airspace should be operational and indications of malfunction should be resolved.

29.4.4 PROCEDURES PRIOR TO RVSM AIRSPACE ENTRY

- a. The following equipment should be operating normally at entry into RVSM airspace—
 - a. Two primary altitude measurement systems;
 - b. One automatic altitude-control system;
 - c. One altitude-alerting device; and

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- d. Should any of the required equipment fail prior to the aircraft entering RVSM airspace, the pilot should request a new clearance so as to avoid flight in this airspace.
- e. Operating Transponder. The operator should ascertain the requirement for an operational transponder in each RVSM area and transition areas adjacent to RVSM airspace where operations are intended.

29.4.5 IN-FLIGHT PROCEDURES

- a. The following policies should be incorporated into flight crew training and procedures—
 - a. Flight crews should comply with aircraft operating restrictions (if required for the specific aircraft group) related to RVSM airworthiness approval;
 - b. Emphasis should be placed on promptly setting the sub-scale on all primary and standby altimeters to 29.92 in Hg/1013.2 mb (Hp) when passing the transition altitude and rechecking for proper altimeter setting when reaching the initial cruising flight level (CFL);
 - c. In level cruise it is essential that the aircraft maintains the CFL. This requires that particular care is taken to ensure that ATC clearances are fully understood and followed. Except in or emergency situations, the aircraft should not intentionally depart from CFL without a positive clearance from ATC;
 - d. During cleared transition between levels, the aircraft should not be allowed to overshoot or undershoot the cleared flight level by more than 150 ft (45 m);
 - e. An automatic altitude-control system shall be operative and engaged during level cruise, except when circumstances such as the need to re-trim the aircraft or turbulence require disengagement. In any event, adherence to cruise altitude should be done by reference to one of the two primary altimeters;
 - f. The altitude-alerting system shall be operational;
 - g. At intervals of approximately one hour, cross-checks between the primary altimeters should be made. A minimum of two should agree within 200ft (60m). (Failure to meet this condition
 - h. will require that the altimetry system be reported as defective and ATC notified) Crosscheck procedures include—
 - The normal pilot scan of cockpit instruments should suffice for altimeter cross-checking on most flights.
 - At least the initial altimeter cross-check in the vicinity of the point of maximum range of ICAO standard nav aids (VOR/ NDB) should be recorded (e.g. on coast out). The readings of the primary and standby altimeters should be recorded and available for use in contingency situations.
 - i. Normally, the altimetry system being used to control the aircraft should be selected to provide the input to the altitude-reporting transponder transmitting information to ATC;

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- j. If the pilot is advised in real time that the aircraft has been identified by a height-monitoring system as exhibiting a Total Vertical Error (TVE) greater than 300 ft (90 m) and/or Altimetry System Error (ASE) greater than 245 ft (75 m) then the pilot should follow established regional procedures to protect the safe operations of the aircraft. (This assumes that the monitoring system will identify TVE or ASE within agreed levels of accuracy and confidence); if the pilot is notified by ATC of an Assigned Altitude Deviation (AAD) error that exceeds 300 ft (90 m) then the pilot should take action to return to the CFL as quickly as possible;

29.4.6 CONTINGENCY PROCEDURES

- a. If, after entering RVSM airspace, the required minima cannot be maintained, the following actions will apply—
- a. The pilot should notify ATC of contingencies (equipment failures, weather conditions) which affect the ability to maintain the CFL and co-ordinate a plan of action. ICAO Doc 7030, *Regional Supplementary Procedures*, is the primary reference document for contingency procedures.
- b. Examples of equipment failures that ATC should be notified of are—
- Failure of all automatic altitude-control systems; aboard the aircraft;
 - Loss of redundancy of altimetry systems;
 - Loss of thrust on an engine necessitating descent; or
 - Any other equipment failure affecting the ability to maintain CFL;
- c. The pilot should notify ATC when encountering greater than moderate turbulence; and
- d. If unable to notify ATC and obtain an ATC clearance prior to deviating from the assigned CFL, the pilot should follow established contingency procedures and obtain ATC clearance as soon as possible.

Notes:

1. *An applicant for an AOC and/or AOC holder shall have mentioned in its operations Manual all the procedures mentioned above including instructions on the clarifications and acceptance of Air Traffic Control Clearances at all times, particularly when terrain clearance is involved, and*
2. *Instructions and training requirements for the avoidance of controlled flight in to terrain (CFIT) and policy for the Ground Proximity Warning System (GPWS)*

b. Post Flight

- a. In making maintenance log book entries against malfunctions in height-keeping systems, the pilot should provide sufficient detail to enable maintenance to effectively troubleshoot and repair the system.
- b. The pilot should detail the actual defect and the crew action taken to try to isolate and rectify the fault.

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- c. The following information should be noted when appropriate—
- Primary and standby altimeter readings;
 - Altitude selector setting;
 - Subscale setting on altimeter;
 - Autopilot used to control the aeroplane and any differences when the alternate system was selected;
 - Differences in altimeter readings if alternate static ports selected;
 - Use of air data computer selector for fault diagnosis procedure; and
 - Transponder selected to provide altitude information to ATC and any difference if alternate transponder or altitude source was manually selected.

29.5 SPECIAL EMPHASIS ITEMS: FLIGHT CREW TRAINING

29.5.1 The following items should also be included in flight crew training programme—

- a. Knowledge and understanding of standard ATC phraseology used in each area of operations;
- b. The importance of crewmembers cross-checking each other to ensure that ATC clearances are promptly and correctly complied with;
- c. Use and limitations in terms of accuracy of standby altimeters in contingencies. Where applicable, the pilot should review the application of SSEC/PEC through the use of correction cards;
- d. Problems of visual perception of other aircraft at 1,000 ft (300 m) planned separation during night conditions, when encountering local phenomena such as northern lights, for opposite
- e. and same direction traffic and during turns;
- f. Characteristics of aircraft altitude capture systems that may lead to the occurrence of overshoots;
- g. TCAS considerations, particularly during climbs/descents in RVSM airspace;
- h. Relationship between the altimetry, automatic altitude control and transponder systems in normal and abnormal situations;
- i. Aircraft operating restrictions (if required for the specific aircraft group) related to RVSM airworthiness approval; and
- j. Contingency procedures in the event of equipment failures, including reporting procedures in the event of altitude errors exceeding requirements.

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29.6 OTHER APPLICATION REQUIREMENTS

29.6.1 PAST PERFORMANCE

29.6.1.1 An operating history of the aircraft to be used should be included in the application.

29.6.1.2 The applicant should show any events or incidents related to poor height-keeping performance that may indicate weaknesses in training, procedures, maintenance or the aircraft group intended to be used.

29.6.2 MINIMUM EQUIPMENT LIST

29.6.2.1 A minimum equipment list (MEL), adopted from the master minimum equipment list (MMEL), should include items pertinent to operating in RVSM airspace.

29.6.3 MAINTENANCE

29.6.3.1 The operator should submit a maintenance programme at the time the operator applies for operational approval.

29.6.4 PLAN FOR PARTICIPATION IN VERIFICATION/MONITORING PROGRAMME

29.6.4.1 The operator shall provide a plan for participation in the verification/monitoring programme.

29.6.4.2 This programme will normally entail a check of at least a portion of the operator's aircraft by an independent height-monitoring system.

29.6.4.3 Verification/Monitoring Programme

- a. A programme to monitor or verify aircraft height-keeping performance is considered a necessary element of RVSM implementation for at least the initial area where RVSM is implemented.
- b. The verification/monitoring programme have the primary objective of observing and evaluating aircraft height-keeping performance to validate crew procedures, aircraft performance and maintenance procedures.
- c. Each aircraft or group of aircraft is required to receive HMU approval.

29.7 APPLICATION REVIEW & EVALUATION

29.7.1 Once the application has been submitted, the CAASL-FS will begin the process of review and evaluation. If the content of the application is insufficient, the CAASL-FS will request additional information from the operator.

29.7.2 When all other airworthiness and operational requirements of the application are met, the CAASL-FS will proceed with the validation flight(s).

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29.7.3 This flight(s) may be conducted in conjunction with the verification/monitoring programme.

29.7.4 VALIDATION FLIGHT(S)

29.7.4.1 In some cases, the review of the RVSM application and programme may suffice for validation purposes. However, the final step of the approval process may be the completion of a validation flight(s).

29.7.4.2 The CAASL-FS may accompany the operator on a flight through RVSM airspace to verify that operations and maintenance procedures and practices are applied effectively. If the performance is adequate, operational approval for RVSM airspace will be granted.

29.7.5 AOC GENERAL INFORMATION DATABASE ENTRY

29.7.5.1 Following the successful conclusion of the demonstration flight for an AOC holder, a new record will be entered in the GID for that organization to include the RVSM authorization and will be included in necessary CAASL records.

29.7.6 OPERATIONAL AUTHORISATION

29.7.6.1 After all open discrepancies have been closed, the—

- a. AOC holder must be issued a revision to Ops Specs Section H to include the RVSM authorization.
- b. General Aviation Operator must be issued a Letter of Authorization (General Aviation).

29.8 REMOVAL OF RVSM AUTHORITY

29.8.1 CONDITIONS FOR REMOVAL OF RVSM AUTHORITY

29.8.1.1 The incident of height-keeping errors that can be tolerated in an RVSM environment is very small. It is incumbent upon each operator to take immediate action to rectify the conditions that caused the error.

- a. The operator should also report the event to the CAASL-FS within 72 hours with initial analysis of causal factors and measures to prevent further events.
- b. The requirement for follow-up reports should be determined by the CAASL-FS.

29.8.1.2 Height-keeping errors fall into two broad categories: errors caused by malfunction of aircraft equipment and operational errors.

- a. An operator who consistently commits errors of either variety may be required to forfeit authority for RVSM operations.
- b. If a problem is identified that is related to one specific aircraft type, then RVSM authority may be removed from the operator for that specific type.

29.8.1.3 The operator should make an effective, timely response to each height-keeping error. The CAASL-FS may consider removing RVSM operational approval if the operator's response to a height-keeping error is not effective or timely.

- a. The CAASL-FS will also consider the operator's past performance in determining the action to be taken.

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- b. If an operator shows a history of operational and/or airworthiness errors, then approval may be removed until the root causes of these errors are shown to be eliminated and RVSM programme and procedures are shown to be effective.
- c. The CAASL-FS will review each situation on a case-by-case basis.

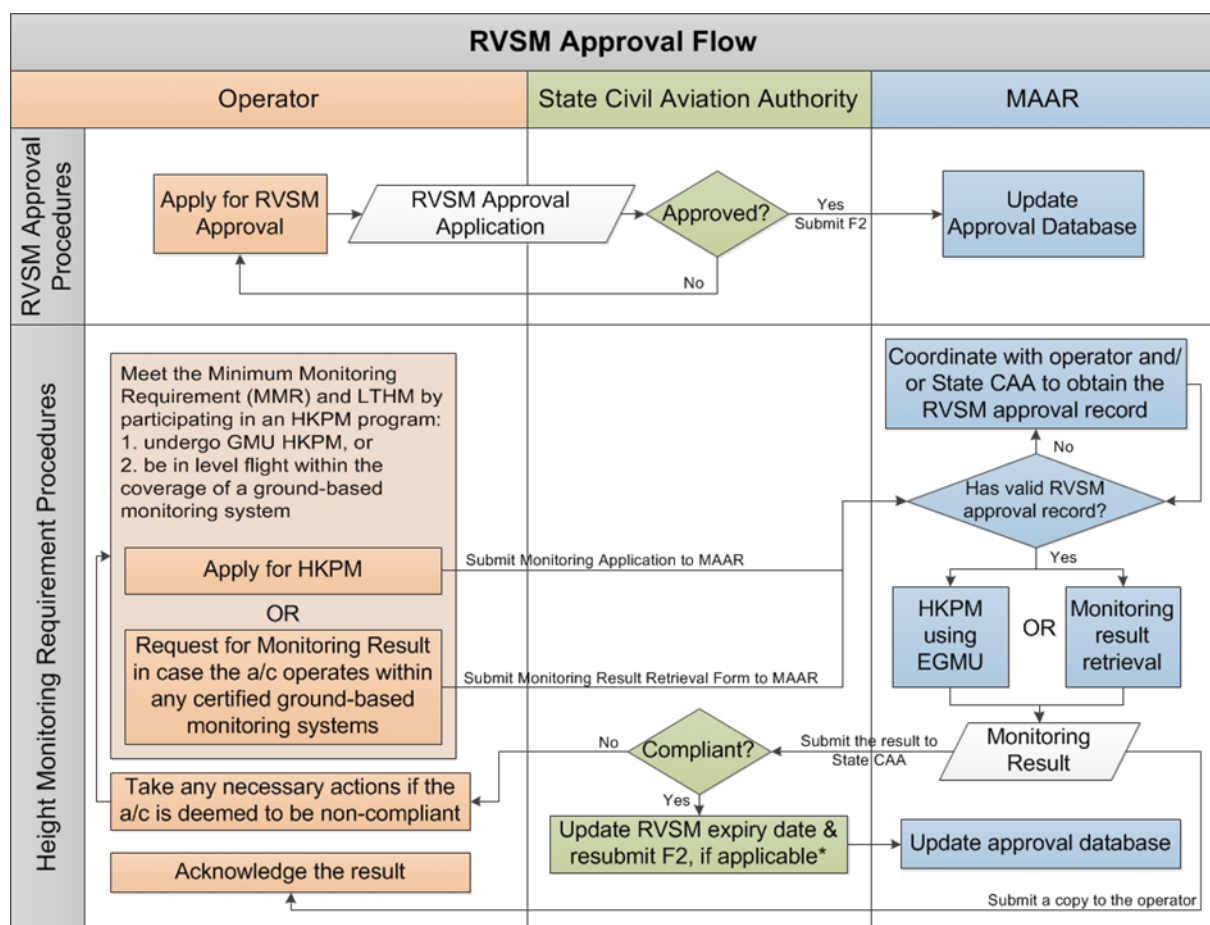
29.9 ENFORCEMENT

29.9.1 Where the CAA Sri Lanka is advised that an air operator has operated in RSVM airspace without approval, enforcement action will be taken in accordance with Aviation Enforcement Policy and Procedures manual SLACAP 5350.

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Appendix A



Note:

LTHM – Long term height monitoring

HKPM – Height keeping performance monitoring

GMU – GPS based monitoring unit



APPENDIX B



Civil Aviation Authority of Sri Lanka

APPLICATION FOR AN RVSM, MNPS & RNP-10 OPERATIONAL APPROVAL/ RENEWAL

Please complete the form in BLOCK CAPITALS using black or dark blue ink after reading the attached guidance.

This form is designed to elicit all the required information from those operators requiring **RVSM**, **MNPS**, **RNP-10** operational approval. Please complete those sections of the form relevant to the approvals required. Sections A and E should be completed in all cases. Completed forms should be submitted to the appropriate department of the CAASL at the address listed in the 'Notes for Completion'.

Applicants are strongly advised to read the 'Notes for Completion' before completing the form.

Section A	Page 1	Operator/Airframe Details	Completion mandatory
Section B	Pages 2-3	RVSM	<input type="checkbox"/> (tick all that apply)
Section C	Page 4	MNPS	<input type="checkbox"/>
Section D	Page 5	RNP10	<input type="checkbox"/>
Section E	Page 5	Signature Block	Completion mandatory
Section F	Pages 6-7	Notes for Completion	
Section G	Page 8	Fleet Details Continuation Sheet	<input type="checkbox"/>

SECTION A OPERATOR/AIRFRAME DETAILS
APPLICANT DETAILS – required for all Approval requests
1. Please give the official name and business or trading name(s), address, mailing address, e-mail address and contact telephone/fax numbers of the applicant.



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AIRCRAFT DETAILS – required for all Approval requests (one aircraft type per form)

2. Aeroplane type, series, manufacturer serial number(s), registration mark(s), mode “S” address code(s), date(s) of modification or certification of the airframe(s) for RVSM.

Aeroplane Type	Aeroplane Series	Manufacturer(s) Serial Number	Registration	Mode “S” Code (hex)	RVSM Modification/ Certification Date

SECTION B RVSM OPERATIONAL APPROVAL

Refer to the accompanying Notes and ICAO Doc 9574 for further guidance.

3. List those ICAO Regions for which this RVSM Operational Approval request is made. If the applicant wishes to operate in oceanic or remote airspace where RVSM is required additional MNPS and or RNP10 approvals will be required.

- a. Continental RVSM airspace. Y/N
- b. Metric airspace areas. Y/N
- c. Oceanic and Remote RVSM airspace. Y/N

4. **RVSM Airworthiness** Documentation – Give reference(s) of relevant documentation which shows that the above airframes have been modified or certified to the RVSM Minimum Aircraft Systems Performance Specification (MASPS) on the dates given at 2 above. State if compliance is from new build or via modification. Include reference to the manufacturer’s statement of RVSM compliance, through compliance with relevant Type Certificate Data Sheet (TCDS), other TCDS, or Service Bulletin (SB), Supplemental Type Certificate (STC) as applicable.

- a. Manufacture’s Statement of aircraft RVSM Compliance.

5. RVSM Training Programmes, Operating Practices and Procedures – provide details of training for **engineering and maintenance staff**, please provide confirmation that training has been conducted - give references of relevant documentation.



6. Continued Airworthiness (Maintenance Procedures).

Provide references to specific documentation and processes designed to satisfy the requirements of the Continued Airworthiness (Maintenance Procedures) detailed in TGL 6 Section 1, Part 6 Para 10.1 to Para 10.4.

- a. State Continued Airworthiness Management Organisation (Part M Subpart G) details: Name, Address and Contract reference. Maintenance Programme Provider Details.
- b. State (Part 145) Maintenance Organisation or equivalent details Name and Contract reference.

7. Operations Manuals, **flight crew** training, crew notices – give reference(s) of details pertinent to RVSM operations in the proposed area(s) of operation. **Include with submission copies of relevant sections from Ops and Training Manuals.**

- a. Provide copies of all flight crew RVSM operating procedures. Detail in the training section of the operations manual the flight crew RVSM training organisation, training programme, means of providing initial and recurrent periodic RVSM training.

8. Minimum Equipment List – reference of MEL where RVSM operations are addressed.

9. Plan for Participation in Verification/Monitoring Programmes – As a minimum provide contact details of appropriate specialist (by name or by post-holder) who understands the requirements of, and the reason for, the programme.

This specialist will need to be aware of the requirements to advise the authority of fleet changes* as soon as they occur and will also need to be readily contactable should routine monitoring show aberrant or unacceptable height keeping performance of an airframe.

10. What is your Proposed Date for the commencement of RVSM operations?



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SECTION C MNPS OPERATIONAL APPROVAL

MNPS Approval can only be granted to operators who are already RVSM approved or who are applying concurrently for RVSM Approval. Refer to the accompanying notes and to the latest edition of “The MNPS Airspace Operations Manual” available on the Internet – excerpts from this manual could be used for an operator’s “operations manual”.

11. Operations Manuals, flight crew training, crew notices – give reference(s) of details pertinent to operations in NAT MNPS Airspace. **Include with submission copies of relevant sections from Ops and Training Manuals.**

12. Minimum Equipment List – reference of MEL where MNPS operations are addressed.

13. Give details of crew experience in NAT MNPS operations.

14. Long Range Navigation System equipment details (See ‘Notes for Completion’):

SECTION D RNP-10 OPERATIONAL APPROVAL

RNP-10 navigation specifications are applied in Oceanic/Remote phases of flight where ground based navigation aids do not normally exist. EASA recognizes compliance with FAA Notice 8400-12A as a means of compliance.



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15. Operations Manuals, flight crew training, crew notices – give reference(s) of details pertinent to operations in RNP-10 airspace. Include with submission copies of relevant sections from Ops and Training Manuals.
16. Minimum Equipment List – reference of MEL where RNP-10 operations are addressed.
17. Long Range Navigation System equipment details (See ‘Notes for Completion’, Para 14). If same as MNPS say so.
18. Give reference of confirmation of RNP-10 eligibility. Include with submission copies of relevant sections from Aircraft Flight Manuals or evidence from navigation system manufacturers.

SECTION E SIGNATURE BLOCK
<p>Signature:</p> <p>Name (BLOCK LETTERS):</p> <p>Appointment:.....</p> <p>Date:</p>
<p>Please note that a minimum of 30 working days will normally be required to check and confirm the information given above - If data is missing or omitted the process may take considerably longer.</p>
SECTION F CAASL FORM 4040 – NOTES FOR COMPLETION



SECTION A – COMPLETION OF SECTION A IS MANDATORY FOR ALL APPLICATIONS

Paragraph 1 – For AOC holders - company name, AOC number and e-mail address will suffice.

Paragraph 2 – This information is required by both the State of Registry for the State RVSM Approvals database and by the verification and monitoring programme office(s) of the appropriate ICAO Region(s). Enter Mode ‘S’ code (if assigned) in hexadecimal format -see also paragraph 10.

SECTION B – RVSM APPROVAL

TGL 6 (rev1) is available on the Internet – see <http://www.ecacnav.com/rvsm> (Note that this Web site contains much additional information about RVSM and has links to other RVSM regions Web sites).

Paragraph 3 – RVSM Operations have been conducted in the North Atlantic (NAT) region since 1997, in Europe (EUR) since 2001 and in the whole of North America (NAM) since early 2005. RVSM operations are now conducted in all the world’s ICAO regions. Specific details regarding the areas of applicability within each region can be found in ICAO Doc 7030/4 – Regional Supplementary Procedures.

Paragraphs 4, 5, 7 and 8 – Details in these paragraphs are required so that the appropriate Flight Safety Division specialists are able to confirm the RVSM compliance data.

Paragraph 6 – Further investigation of Continued Airworthiness (Maintenance Procedures) **cannot** commence until such time as the information at Paragraph 6 has been provided. In addition to the information requested, amendments to your company Maintenance Management Exposition may also have to be submitted and approved. These amendments must define the procedures to be followed for initial and continued RVSM approval and should be submitted to the CAASL in the normal manner.

Paragraph 9 – Linked with paragraph 2. See TGL 6 or the AIC for further details. A major requirement of the verification and monitoring programmes is for the airframe details of an operator’s RVSM approved fleet to be kept up-to-date. This information also enables an ICAO requirement to monitor Altimeter Systems Error drift on an operator fleet basis.

SECTION C – MNPS APPROVAL

Paragraphs 11, 12 and 13 – Details in these paragraphs are required so that the appropriate Flight Safety Division specialists are able to confirm MNPS compliance.

Paragraph 14 – Suitable Long Range Navigation System Equipment for NAT MNPS, RNP-10 airspace requires information on not just the types and numbers of Inertial sensors and GNSS sensors fitted but also of the numbers of Flight Management Systems (FMS) that are equipped. This drives operators’ procedures and contingency procedures in the event of component failures.

An example of an acceptable entry would be:

“XXX (Manufacturer and Model Number) Inertial Reference Sensor with a YYY (Manufacture and Model Number) Flight Management System (where “XXX” and “YYY” represent the manufacturer’s names). Inertial alignment limits are 60° South and 76° North latitudes.

Or

“ZZZ (Manufacturer and Model Number) GPS Navigation Sensor with a YYY (Manufacturer and Model Number) FMS.” Such an entry would need to be supported with documentation that shows that the GPS sensor meets the specifications in FAA Notice 8110.60 or EASA AMC 20-5.



SECTION D – RNP-10 APPROVAL

Paragraphs 15 and 16 – Details in these paragraphs are required so that the appropriate Flight Safety Division specialists are able to confirm RNP-10 compliance.

Paragraph 17 – Please include details in the format requested in Paragraph 14 above. Note: RNP-10 operations require the carriage of at least dual independent, long range navigation systems.

Paragraph 18 – The CAASL will accept aircraft eligibility for RNP-10 operations either through RNP-10 certification or through prior navigation system certification.

SUBMISSIONS AND ENQUIRIES

Address for submissions:

Operations Section,
Flight Safety Division,
Civil Aviation Authority of Sri Lanka,
152/1, Minuwangoda Road,
Katunayake,
Sri Lanka

Contact details for enquiries:

Tel : 0112358800

Email : dops@caa.lk

Web : www.caa.lk



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Checklist for RVSM Approval and Oversight Procedures

1. Check for Operators procedure to obtain CAASL approval.

- Airworthiness Approval Procedures
- Operations Approval Procedures

Remarks

2. Check for Operators documents or correspondence with Aircraft Manufacturer or Design Organization and obtains aircraft RVSM airworthiness approval documents, if available:

- For in-service aircraft: Ensure any of the following documents for RVSM compliance data. e.g., Service Bulletin (SB), Aircraft Service Change (ASC), Supplemental Type Certificate (STC);
- For New or in-production aircraft: Ensure any of the following documents for RVSM compliance data. e.g., Airplane Flight Manual statement, Type Certificate Data Sheet
- Check whether Manufacturer has advised operator whether aircraft is covered by group approval or is considered as a non- group aircraft.
- Check whether Manufacturer has advised operator on obtaining airworthiness approval documents.

3. Check whether the Operator is applying to CAA Sri Lanka with adequate information example

- Revision of manuals (Maintenance program)
- Training procedures (Training Manual)
- Aircraft identification
- Height monitoring

4. Check whether the operator submits an application to CAASL for operational approval well in advance at least 15 days.

5. Check whether the following items are enclosed along with the application:

- Airworthiness Documents. (See TCAS Version 7 information).
- Description of Aircraft Equipment.
- Operations Training Programs and Operating Practices and Procedures.
- Operations Manuals and Checklists.
- Past Performance (Height Monitoring accuracy)
- Minimum Equipment List (only if operating under an MEL).
- Maintenance Program.
- Plan for Participation in Monitoring Programs. (Annual Plan for Height Monitoring).
- Plan for reporting altitude-keeping errors.
- Training records for aircraft maintenance engineers.



<ul style="list-style-type: none"> • Oversight program.
Check the below mentioned items in the form of policy as well as compliance record
<ul style="list-style-type: none"> • Training requirements and syllabus • Initial, recurrent and conversion training
Ensure that all above airworthiness, continued airworthiness and operations program requirements are met before recommendation for approval is granted.
Upon verifying satisfactory compliance of all above requirements the recommendation may be forwarded to flight operations for necessary action or recommendations.

NOTE 1: After fulfilling all the requirements of operation department CAASL makes entry of RVSM approval airframes on the appropriate RVSM Approvals Database. RVSM approval is endorsed in Air Operator Certificate (Operational Specification)

NOTE 2: It may be verified that whether the aircraft is approved for RVSM on individual or group of aircraft basis.

NOTE 3: If the application is found complying with all the above requirements, provisional approval will be granted for 6 months. Upon height monitoring and receipt of satisfactory height monitoring data from the height monitoring agency the final approval may be granted.

Checked by Name: Designation: Date:

Verified by Name: Designation: Date:



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Chapter 30 – PBN - OPERATIONAL APPROVAL

Note — ICAO has developed a Performance-based Navigation (PBN) Operational Approval Manual (Doc 9997) which provides detailed guidance on the operational approval process in the context of performance-based navigation. The guidance outlines the specific requirements for each navigation specification and includes detailed job aids. CAASL has adapted this Doc and has published the PBN Operational Approval Handbook SLCAP 4520. This chapter provides a brief overview of PBN and outlines the CAASL policy which is to adopt the guidance and job aids outlined in Doc 9997 as the methodology for air operator approval of PBN].

PBN OPERATIONAL APPROVAL PROCESS

Assessment of each operator needs to be made by the state

REFERENCE DOCUMENTS

ICAO DOC. 9613 – PBN Manual
ICAO DOC 9997 - PBN Operational Approval
ICAO DOC 8168 - Procedure Design
SLCAP4520 – PBN Operational Approval Handbook

The assessment should take into account.
Operational evaluation of each RNP procedure
Flight Operational Safety assessment (FOSA)
Training key personnel like flight crew and dispatchers
Operational Documentation
Navigation Database Integrity Check
Means to predict the GPS primary availability (RAIM)

30.1 BACKGROUND

- 30.1.1 FOR-A 7.2.2 require operators to be authorized prior to conducting flights in defined portions of airspace or any routes where a navigation specification for performance-based navigation is prescribed. In addition, the aircraft must be equipped with navigation equipment in accordance with the navigation specification and flight crews provided with appropriate training. This chapter outlines the CAASL procedures for providing authorization where a navigation specification is prescribed.
- 30.1.2 Conventional navigation is dependent upon ground-based radio navigation aids. It has been the mainstay of aviation for the last seventy years and pilots, operators, manufacturers and air navigation service providers are all familiar with the associated technology, avionics, instrumentation, operations, training and performance.

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30.1.3 Performance-based navigation (PBN) detailed in the ICAO *Performance-based Navigation (PBN) Manual* (Doc 9613) is based upon area navigation principles. While various methods of area navigation have been in existence for many years, the widespread use of area navigation as a primary navigation function is a more recent phenomenon. The PBN concept is intended to better define the use of area navigation systems and is expected to replace much of the existing conventional navigation routes within the next twenty years.

30.1.4 The fundamentals of PBN operations are relatively straightforward and operational approval need not be a complicated process for either applicant or CAASL. However, the transition to new technology, new navigation and new operational concepts and the dependence on data driven operations requires careful management. Concerning this matter, ICAO has developed *Performance-based Navigation (PBN) Operational Approval Manual* (Doc 9997) to provide guidance on the operational approval process in the context of performance-based navigation (PBN). It is intended for inspectors and others involved in the regulation of PBN operations. The CAASL PBN Operational Approval Handbook SLCAP 4520 is an adaptation of the ICAO Doc 9997. CAASL Inspectors are required to refer to this manual for approval of PBN operations.

30.2 PBN OVERVIEW

30.2.1 Area navigation systems evolved in a manner similar to conventional ground-based routes and procedures. The early systems used very high-frequency omnidirectional radio range (VOR) and distance measuring equipment (DME) for estimating their position in domestic operations and inertial navigation systems (INS) were employed in oceanic operations. In most cases, a specific area navigation system was identified and its performance was evaluated through a combination of analysis and flight testing. In some cases, it was necessary to identify the individual models of equipment that could be operated within the airspace concerned. Such prescriptive requirements resulted in delays to the introduction of new area navigation system capabilities and higher costs for maintaining appropriate certification. The PBN concept was developed with globally-applicable performance requirements, detailed in accompanying navigation specifications, in order to avoid these high costs and delays.

30.2.2 The PBN concept requires that the aircraft area navigation system performance is defined in terms of the accuracy, integrity, availability, continuity and functionality necessary to operate in the context of a particular airspace concept. Appropriate positioning sensors are also identified. These may include VOR/DME, DME/DME, GNSS and/or INS. The performance is detailed in a navigation specification at sufficient a level of detail to facilitate global harmonization. The navigation specification not only lays out the aircraft system performance requirements but also the requirements in terms of flight crew procedures and training, as well as any appropriate maintenance requirements, such as the provision of navigation databases.

30.3 RNAV AND RNP

30.3.1 RNAV specifications have been developed to support existing capabilities in aircraft equipped with area navigation systems which, in the general case, were not designed to provide on-

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board performance monitoring and alerting. RNAV specifications are similar to RNP specifications but do not require an on-board performance monitoring and alerting capability.

- 30.3.2 RNP specifications have been developed from a need to support operations that require greater integrity assurance, where the pilot is able to detect when the navigation system is not achieving, or cannot guarantee with appropriate integrity, the navigation performance required for the operation. Such systems are known as RNP systems. RNP systems provide greater assurance of integrity and, hence, can offer safety, efficiency, capacity and other operational benefits.

30.4 CAASL PBN OPERATIONAL APPROVAL PROCESS

- 30.4.1 The CAASL will issue authorization to operators, where a navigation specification for performance-based navigation is prescribed, provided that the operator can demonstrate compliance with the applicable requirements. A list of available navigation specifications is outlined in Attachment A to this chapter.

- 30.4.2 The requirements and guidance provided in CAASL PBN Operational Approval Handbook SLCAP 4520 will be utilized by CAASL staff for the review of PBN applications by Sri Lankan air operators and subsequent issuance of PBN approvals as follows:

Air operators requesting authorization for a particular performance-based navigation specification shall make application providing the information as outlined in Annex D of Doc 9997;

The Job Aid for the requested navigation specification(s) as contained in CAASL PBN Operational Approval Handbook SLCAP 4520, JOB AIDS will be completed by the air operator and the CAASL inspector as appropriate. The actions recommended for the inspector and the operator contained in the Job Aid will be mandatory for CAASL inspectors and operators; and upon completion of the job aid confirming that all requirements have been met for the particular navigation specification, the CAASL will issue the appropriate operations specification. Examples of operations specification entries as outlined in Annex B of Doc 9997 will be utilized.

30.5 PROCEDURES

Refer to Appendix 30 B and 30 C of this Manual for the detailed procedures on acceptance, verification and approval of Special Operations authorization.

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APPENDIX 30A

1. NAVIGATION SPECIFICATIONS

1.1 The navigation specifications in Table 1-1 have been published to date.

Table 1-1. Navigation specifications published to date

Flight Phase								
	<i>En-route</i>				<i>Approach</i>			
<i>Navigation specification</i>	<i>oceanic/ remote</i>	<i>En-route continental</i>	<i>Arrival</i>	<i>Initial</i>	<i>Intermediate</i>	<i>Final</i>	<i>Missed</i>	<i>Departure</i>
RNAV 10	10							
RNAV 5 ^a		5	5					
RNAV 2		2	2					2
RNAV 1		1	1	1	1		1 ^b	1
RNP 4	4							
RNP 2	2	2						
Advanced RNP ^f	2	2 or 1	1	1	1	0.3	1 ^b	1
RNP 1			1 ^d	1	1		1 ^b	1 ^d
RNP 0.3 ^e		0.3	0.3	0.3	0.3	—	0.3 ^b	0.3
RNP APCH				1	1	0.3 ^g	1 ^b or 0.3 ^c	
RNP AR APCH				1-0.1	1-0.1	0.3-0.1	1-0.1 ^f	

Notes:

RNAV 5 is an en-route navigation specification which may be used for the initial part of a STAR outside 30 NM and above MSA.

Applies only once 50 m (40 m Cat H) obstacle clearance has been achieved after the start of climb.

RNP APCH is divided into two parts. This value applies during the initial straight ahead segment in RNP APCH Part B (SBAS LPV) approaches.

Beyond 30 NM from the airport reference point (ARP), the accuracy value for alerting becomes 2 NM.

The RNP 0.3 specification is primarily intended for helicopter operations.

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If $<RNP\ 1$ is required in the missed approach, the reliance on inertial to cater for loss of GNSS in final means that accuracy will slowly deteriorate and any accuracy value equal to that used in final can be applied only for a limited distance.

RNP APCH is divided into two parts. RNP 0.3 is applicable to RNP APCH Part A. Different angular performance requirements are applicable to RNP APCH Part B only

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APPENDIX 30B

Procedure for the ACCEPTANCE of a Special Operation authorization application (Operations Specification)

OPERATIONS -PROCEDURE

PURPOSE: To determine the acceptability of a new application for an operations specification.

CIRCUMSTANCES OF USE: Whenever an air operator submits an application to add an operation specification to the AOC

REFERENCE CRITERIA: FSR, SLCAP 4100

COORDINATION: The application will be jointly reviewed by Flight operations and Airworthiness inspectors

TASK TO PERFORM: Verify the application package to ensure that it contains:

- Evidence of the aircraft capability as indicated in the aircraft certification documents and aircraft manuals;
- Amendment proposals relevant parts of the CAMO exposition manual and Maintenance programme appropriate to support the intended additional operation;
- The maintenance technician training programme, if applicable;
- Amendment proposals relevant parts of the operations manual for the addition of appropriate operating procedures;
- The flight crew training programme, if applicable;
- Amendment proposal to the dispatch procedures, if applicable;
- Amendment proposal to the flight dispatcher training programme, if applicable; and
- Flight Operation Safety Assessment (FOSA) if applicable.

If one or more required elements has not been submitted, DFSR will, in writing, inform the applicant that (1) the submitted package is incomplete and (2) cannot be processed until the complete application package is submitted;

If the package is complete, DFSR will acknowledge reception of the package in writing indicating that the application has been *accepted* and will be processed;



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Verification checklist for the ACCEPTANCE of a Special Operation authorization application (Operations Specification)

Date: _____

Air Operator:_____

File No.:_____

Insert additional information as required]: _____

No.	Requirement	S	U	N/ A	Observations remarks
1	Aircraft capability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	CAMOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Maintenance programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Maintenance technician training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Flight crew training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Dispatch procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Dispatch training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Flight Operation Safety Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



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Inspector comments:

Recommendation:

Inspector Signature: Date:



APPENDIX 30C

Procedure for the verification and APPROVAL of special operation authorization application (Operations Specifications)

OPERATIONS -PROCEDURE

PURPOSE:

To assess whether the applicant has satisfied all the requirements applicable to the OPS SPEC applied for.

NOTE: This is a general procedure and there might be cases where the applicable requirements outline additional elements not covered in this procedure. In such a case, inspectors are responsible to verify those additional elements and to report them manually in the associated checklist.

CIRCUMSTANCES OF USE:

Whenever an air operator submits an application to add an operation specification to the AOC.

REFERENCE CRITERIA:

FSR

SLCAP 4100

COORDINATION:

Flight operations and Airworthiness

TASK TO PERFORM:

Verify each document submitted by the operator against the applicable regulation or requirement to ensure compliance with all applicable requirements.

The verification will be performed for each of the following documents according to their applicability in relation to the authorization sought:

- ☐ Aircraft capability evidence;
- ☐ CAMO exposition manual amendment;
- ☐ Maintenance programme amendment;

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- ☐ Maintenance technician training programme;
- ☐ Operations Manual Part A amendment;
- ☐ Operations Manual Part B amendment
- ☐ MEL amendment
- ☐ Operations Manual Part C amendment;
- ☐ Operations Manual Part D amendment;
- ☐ Dispatch Manual or procedures amendment;
- ☐ Dispatcher training programme;
- ☐ Flight Operation Safety Assessment, etc.;
- ☐ When there is a specific procedure to verify a document or a procedure, the specific procedure shall be used to assess that document or procedure and the assessment results indicated on the corresponding check list.
- ☐ The assessment results recorded on specific checklists shall be summarized in the appropriate field of the checklist associated with this procedure.
- ☐ Special operation (Operation specification) approval
- ☐ While some of the submitted elements might be deemed satisfactory and other not, DFSR will not issue independent approval of such individual package elements. An approval will be granted only when all elements have been deemed satisfactory.
- ☐ However, in the case of training programmes, DFSR could issue a provisional approval of individual training programme allowing for the training to take place. Training programme approval may be conditional to satisfactory monitoring report but in any case should be included with the OP SPEC approval.
- ☐ The approval of the request will be all inclusive and granted only when all requirements are complied with and after a satisfactory assessment of all applicable elements;
- ☐ The approval will be granted through a letter indicating specific approval of each required element with the attached amended AOC operations specification document.



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Chapter 31 - GPS-BASED AREA NAVIGATION (RNAV)

31.1 GENERAL

31.1.1 Instrument flight has traditionally been restricted to flying along routes connected by ground based navigation aids. But, technology has evolved to the extent that reliance on this traditional means of instrument navigation is no longer necessary.

31.1.1.1 Modern flight management systems are capable of incorporating navigation information from ground or satellite-based sources that enable aircraft to take direct routes during all phases of IFR flight.

31.1.1.2 Furthermore, vertical guidance is available for use during en-route and terminal operations.

31.1.2 Detailed guidance covering most aspects of RNAV approvals may be found in the following U.S. FAA documents (equivalent guidance from other Aviation Authorities may be acceptable)—

31.1.2.1 AC 25-15, Approval of Flight Management Systems in Transport Category Airplanes;

31.1.2.2 AC 90-45A, Approval of Area Navigation Systems for Use in the U.S. National Airspace System;

31.1.2.3 AC 20-138, Airworthiness Approval of GPS Navigation Equipment For Use As a VFR and IFR Supplemental Navigation System;

31.1.2.4 AC 90-94, Guidelines for Using GPS Equipment for IFR En Route and Terminal Operations and for Non precision Instrument Approaches in the U.S. National Airspace System; and

31.1.2.5 Document N8110.60, GPS as a Primary Means of Navigation for Oceanic/Remote Operations.

31.2 APPROVAL OF GPS RNAV

31.2.1 GENERAL

31.2.1.1 In most cases, GPS-equipped aircraft will already be certified with an approved RNAV system, which only leaves the training in its use to be approved.

- a. In instances where the RNAV system is installed “after market”, airworthiness approval will be required in addition to the operations approval.
- b. In all cases, a Company Operations/Training Manual change incorporating the RNAV training programme would be required for air operators.



31.2.2 AOC GENERAL INSPECTION DATABASE ENTRY

- 31.2.2.1 Following the successful conclusion of the demonstration flight for an AOC holder, a new record will be entered in the GID for that organization to include the RVSM authorization and will be included in necessary CAASL records.

31.2.3 PERATIONAL AUTHORISATION

- 31.2.3.1 After all open discrepancies have been closed, the—
- AOC holder must be issued a revision to Ops Specs Section H to include the GPS NAV authorization.
 - General Aviation Operator must be issued a Letter of Authorization (General Aviation).
 - Individual operators would be required to show they have received the training required by this chapter.

31.3 CONDITIONS FOR USE OF GPS RNAV

31.3.1 DEFINITIONS

31.3.1.1 Primary Means of Navigation

- A primary-means navigation system is a navigation system approved for a given operation or phase of flight that must meet accuracy and integrity requirements, but need not meet full availability and continuity of service requirements. Safety is achieved by limiting flights to specific time periods and through procedural restrictions.
- Primary-means navigation systems, under the right GPS constellation conditions, may be used as the only required means of satisfying the necessary levels of accuracy, integrity and availability for a particular area, route, procedure or operation.
- The use of primary-means equipment requires that flights be planned for times when GPS signals will support operations. This pre-flight planning is achieved through the use of a Receiver Autonomous Integrity Monitoring (RAIM) prediction programme, and certain dispatch conditions apply.

31.3.1.2 Class II Navigation

Any En-route flight operation or portion of an En-route operation (irrespective of the means of navigation), which takes place outside (beyond) the designated Operational Service Volume of ICAO standard airways navigation facilities (VOR, VOR/DME, NDB).

31.3.1.3 Fault Detection and Exclusion (FDE)

- Capability of GPS to—
 - Detect a satellite failure which effects navigation; and
 - Automatically exclude that satellite from the navigation solution.

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31.4 REQUIRED MINIMUM CONVENTIONAL NAVIGATION EQUIPMENT

31.4.1 Operators of aircraft using RNAV systems incorporating GPS as the primary means of navigation must ensure their aircraft are fitted with at least the minimum conventional navigation equipment specified by regulations for IFR or VFR flight.

31.4.1.1 For IFR flight, that would mean sufficient radio navigation equipment to permit the pilot, in the event of the failure at any stage of the flight of any item of that equipment, including any associated flight instrument display, to proceed to the destination aerodrome or proceed to another aerodrome that is suitable for landing, complete an instrument approach and, if necessary, conduct a missed approach procedure.

31.4.1.2 This means the aircraft must be fitted with the appropriate navigation equipment to fly the route if GPS failure occurs (VOR/DME, ADF for domestic operations and in addition, INS/IRS for long range international operations)

31.4.2 The navigation database must be current and existing fixes/waypoints used for navigation shall be retrieved from the database, unless ATC assigns a pseudo-fix consisting of a latitude and a longitude.

31.5 USE OF GPS: IFR ENROUTE & TERMINAL OPERATIONS

31.5.1 GPS may be used as the primary means of IFR flight guidance for en-route and terminal operations, including STARs and SIDs, subject to the following provisions—

31.5.1.1 When selecting an alternate aerodrome, if required, the determination of the alternate weather minima for that aerodrome shall be based on any conventional approaches published for that aerodrome not on GPS approaches, unless GPS is the only available approach; and

31.5.1.2 When filing flight plans, the COM/NAV equipment suffix “G” must be used to indicate GNSS capability.

31.6 USE OF GPS: IFR APPROACHES/MISSED APPROACHES

31.6.1 PRIMARY MEANS OF NAVIGATION

31.6.1.1 General

- a. GPS may be used as the primary means of IFR flight guidance for published GPS approaches and missed approaches provided—
- b. The GPS navigation database contains the GPS approach to be flown and the approach is retrieved from that database.
 - The database must store the location of all waypoints required to define the approach and present them in the order depicted on the published instrument approach procedure chart.



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- Approach waypoints must be verified either by confirming the coordinates or ensuring that the bearing and distance information between waypoints is consistent with charted data;
- c. When communicating with ATC, the pilot shall request the approach by its published name (for example, for the GPS Rwy 12 approach at Hanoi: “RNAV RWY 12”);

31.6.1.2 Coincident with Conventional Approach

- a. For GPS approaches that **are** coincident with a conventional approach, the pilot does not commence using or continue to use GPS for the approach if a receiver autonomous integrity monitoring (RAIM) warning is displayed or there is some other malfunction of the GPS equipment.
- b. If the warning precludes the approach but GPS En-route navigation is still possible, maintain the missed approach altitude and follow the missed approach routing for the GPS approach being flown.
 - If a complete loss of GPS is experienced and VFR flight is not possible, revert to the conventional approach, maintain the missed approach altitude and follow the missed approach routing for the conventional approach. Advise ATC as soon as possible; and

31.6.1.3 NOT Coincident with Conventional Approach

- a. For GPS approaches that **are not** coincident with a conventional approach, the pilot does not commence using or continue to use GPS for the approach if a RAIM warning is displayed or there is some other malfunction of the GPS equipment.
 - If the warning precludes the approach but En-route navigation is still possible, maintain the missed approach altitude and follow the missed approach routing.
 - If a complete loss of GPS is experienced and VFR flight is not possible, climb to the appropriate minimum sector altitude immediately, advise ATC and request further clearance/vectoring.

31.6.2 SUPPLEMENTARY MEANS OF NAVIGATION

31.6.1.2 GPS may be used as a supplementary means of IFR flight guidance for published approaches based on conventional navigation aids provided—

- a. The primary navigation aid is a ground-based navigation aid and the GPS is used as backup;
- b. The GPS navigation database contains the non-precision approach to be flown. The database must store the location of all waypoints required to define the approach and present them in the order depicted on the published instrument approach procedure chart; and
- c. When communicating with ATC, the pilot shall request the approach by its published name (for example, for the VOR Rwy 12 approach at Hanoi: “VOR RWY 12”).

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31.7 GPS NAVIGATION PROCEDURES

31.7.1 The following procedures shall be followed by pilots using GPS for navigation—

- 31.7.1.1 Continuously monitor the GPS by comparing with conventional navigation systems where possible;
- 31.7.1.2 If a RAIM warning occurs while using GPS as the primary means of navigation, discontinue use of the GPS, advise ATC and obtain a revised clearance;
- 31.7.1.3 When using GPS as a supplementary aid, in the event of a discrepancy between GPS and conventional navigation information, discontinue GPS navigation and use the conventional navigation system. Report the circumstances to ATC;
- 31.7.1.4 When responding to ATC requests for a distance from a VOR or a fix based on DME, GPS distance may be used. In replying, pilots shall use the phraseology “30 miles from the _____ VOR” or “30 miles from the _____ fix” for GPS distance, or “30 DME from the _____ VOR” or “30 DME from the _____ fix” for DME distance; and
- 31.7.1.5 Where a fix is defined overhead an NDB, VOR or by an ADF or VOR/DME bearing(s), the pilot may use GPS waypoints for navigational reference in their place when the GPS position coincides with the fix.

31.8 TRAINING

31.8.1 GENERAL

- 31.8.1.1 Due to the increasing use of GPS as the preferred means of navigation and the relative simplicity of inertial systems, this section will focus on GPS training requirements. Training in RNAV systems based on ground-based navigation aids and inertial reference will be similar but not as extensive.
- 31.8.1.2 Holders of air operator certificates and individual operators must ensure that the required training has been completed. Air operators shall submit their training programme for approval prior to undertaking the training.
- If the content appears satisfactory, interim approval will be granted and training may commence.
 - In some cases, final approval may be issued immediately.
 - Individual operators may take out-sourced training but must ensure the programme includes all the elements outlined below and must provide proof of this when seeking approval to conduct RNAV operations.

31.8.2 GENERAL TRAINING

- 31.8.2.1 To qualify for use of RNAV systems in IFR operations, including RNAV approaches, an air operator shall have an approved flight crew training and qualifications programme for use of the system.

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- a. All flight crew shall have completed the appropriate training and, in addition, flight crew involved in air transport operations shall have completed an in-flight check or an equivalent check in an approved synthetic training device.

31.8.2.2 Training shall be in the following areas—

- a. Pre-flight;
- b. Normal operation of the system;
- c. Procedures for manually updating the system;
- d. Methods of monitoring, cross checking and recording system information;
- e. Operation in area of compass unreliability;
- f. Malfunction procedures;
- g. Terminal procedures;
- h. Waypoint symbology, plotting procedures, record keeping duties/practices;
- i. Time keeping procedures; and
- b. Post-flight.

31.8.2.3 Where pilots are required to use more than one type of GPS for approach, the training programme shall address the differences between the units, unless the units have been determined by the CAASL-FS to be sufficiently similar.

31.8.2.4 Ground training shall include "hands on" training using a desk top simulator, a computer based simulation of the unit to be used, a static in-aircraft unit or other ground training device acceptable to the CAASL-FS.

31.8.3 GROUND TRAINING: NON-INTEGRATED RECEIVERS (PANEL MOUNTED GPS RECEIVERS)

31.8.3.1 An operator shall ensure that the training programme candidates are trained to proficiency in each of the elements associated with the following areas—

31.8.3.2 Knowledge

The GPS system, including—

- GPS system components and aircraft equipment;
- The composition of satellite constellation;
- The minimum number of satellites required for 2-D and 3-D navigation;
- The basic concept of satellite ranging;
- Factors affecting the accuracy of GPS signals;
- The World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

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- Human factors applicable to the use of GPS and how errors may be reduced or eliminated;
- Company standard operating procedures for using GPS units; and
- Procedures for reporting GPS problems and database errors.
- Ability to perform the following operational tasks:
- Select appropriate operational modes;
- Recall categories of information contained in the database;
- Predict RAIM availability;
- Enter and verify user defined waypoints;
- Recall and verify database waypoints;
- Interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;
- Intercept and maintain GPS defined tracks;
- Determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;
- Recognition of waypoint passage;
- Use of 'direct to' function;
- Link En-route portion of GPS flight plan to approach;
- Conduct SIDs, STARs, terminal area procedures and holds;
- Retrieve, verify and conduct GPS standalone approaches; and
- Conduct GPS missed approaches.

31.8.3.3 Operational & Serviceability Checks

Ability to conduct the following operational and serviceability checks—

- Database currency and area of operation;
- Receiver serviceability;
- RAIM status;
- CDI sensitivity;
- Position indication; and
- Number of satellites acquired and, if available, satellite position information.

31.8.3.4 Warnings & Messages

Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable—

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- Loss of RAIM";
- "2D navigation";
- "In Dead Reckoning Mode";
- "Database out of date";
- "GPS fail"
- "Barometric input fail";
- "Power/battery low" or "fail";
- "Parallel offset on"; and
- "Satellite fail".

31.8.4 **GROUND TRAINING: INTEGRATED RECEIVERS (FLIGHT MANAGEMENT SYSTEMS)**

31.8.4.1 An operator shall ensure that the training programme candidates are trained to proficiency in each of the elements associated with the following areas—

31.8.4.2 **GPS Systems**

Knowledge with the respect to the GPS system and theory of operation, including—

- GPS system components and aircraft equipment;
- The composition of satellite constellation;
- The minimum number of satellites required for 2-D and 3-D navigation;
- The basic concept of satellite ranging;
- Factors affecting the accuracy of GPS signals;
- The WGS84 datum and the effect of using any other datum; and
- Human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness); and

31.8.4.3 **Operational Tasks**

Ability to perform the following operational tasks—

- Predict RAIM availability;
- Link En-route portion of GPS flight plan to approach;
- Conduct GPS stand-alone approaches; and
- Conduct GPS missed approaches.



31.8.4.4 **Operational & Serviceability Checks**

Ability to conduct the following operational and serviceability checks—

- RAIM status;
- CDI sensitivity; and
- Number of satellites acquired and, if available, satellite position information.

31.8.4.5 **Warnings & Messages**

Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable—

- "Loss of RAIM";
- "2D navigation";
- "GPS fail";
- "Barometric input fail"; and
- "Satellite fail".

31.9 **FLIGHT TRAINING**

31.9.1 Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorised to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the CAASL-FS to be sufficiently similar) that is installed in company aircraft.

31.9.2 Flight training shall be conducted by a designated training pilot who has completed the company ground training programme approved by the CAASL-FS, and demonstrated proficiency in the use of the model of GPS (or a model determined by the CAASL-FS to be sufficiently similar), or to an approved check pilot



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32.1 GENERAL

32.1.1 The regulations require that aircraft cannot be descended below established minima during instrument approaches unless the required visual reference has been established.

32.1.1.1 International convention has established the standard minima for precision and non-precision approaches and these values have been applied to all approaches and published in the appropriate IFR publications.

32.1.1.2 The lowest standard approach minimum for a precision approach is 200 feet above the touchdown zone elevation.

- a. Technology, training and equipment improvements now enable this “standard” minimum to be lowered. Accordingly, there is the capability for aircraft to land automatically or manually to limits of zero feet and zero visibility.

32.1.2 Depending on a variety of factors, an operator may be granted approval to conduct the following categories of approaches to the limits specified—

32.1.3 This section contains the criteria pertaining to operations and flight crew to be used by Operations Inspectors when asked to approve Category (CAT) II and III landing minima for operators.

32.1.3.1 When the criteria for approval are met, an Ops Specs revision will be made to Section H, as applicable, or a LOA for GA aircraft operators will be issued.

32.1.3.2 The Ops Specs will include specific reference to the location of the applicable policy and procedure in the company manual system.

32.1.3.3 The LOA will contain specific guidance regarding pilots, aircraft and airports when CAT II and CAT III landing minima are used.

Category	Height Above Threshold (DH)	Runway Visual Range
Interim CAT II	150 ft	1200 ft (350 m)
CAT II	100 ft	1200 ft (350 m)
CAT III A	No DH or <100 ft	700 ft (200 m)
CAT III B	No DH or <50	<700 ft to =150 ft (50 m)
CAT III C	No DH	No RVR

32.1.4 The complete requirements specified in the US FAA Advisory Circular (AC) 120-29A and 91-16 (as amended) for CAT II and AC 120-28D (as amended) for CAT III, or their equivalents, must be met prior to issuing the appropriate Ops Specs.



32.2 TRAINING

32.2.1 Operators requesting CAT II and III landing minima shall provide flight crew member training programme for low visibility operations that include structured courses of ground and simulator training.

32.2.2 Flight crew members with no previous CAT II or III experience must complete the initial training programme prescribed in this section.

32.2.3 INITIAL GROUND TRAINING

32.2.3.1 Operators requesting CAT II and III landing minima shall provide an initial ground training course for low visibility operations that covers at least—

- a. The characteristics and limitations of the precision approach being used;
- b. The aircraft requirements to conduct CAT II/III approaches;
- c. The ground system requirements to conduct CAT II/III approaches;
- d. The characteristics of the visual aids;
- e. The effect on minima caused by changes in the status of ground installations;
- f. The effects of known unserviceabilities and the use of minimum equipment lists;
- g. Operating limitations resulting from airworthiness certification;
- h. Guidance on the visual cues required at decision height (DH), if applicable, together with information on maximum deviation allowed from glide path or localizer;
- i. The importance and significance of Alert Height (AH), if applicable, and the action in the event of any failure above and below the AH;
- j. The characteristics of fog;
- c. The operational capabilities and limitations of the particular airborne system;
- d. The effects of precipitation, ice accretion, low level wind shear and turbulence;
- e. The effect of specific aircraft malfunctions;
- f. The use and limitations of RVR assessment systems;
- g. The principles of obstacle clearance requirements;
- h. Recognition of and action to be taken in the event of failure of ground equipment;
- i. The procedures and precautions to be followed with regard to surface movement during
- j. operations when the RVR is 600ft (180m) or less;
- k. The significance of DH based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems;
- l. The qualification requirements for pilots to obtain and retain approval to conduct CAT II and III operations; and
- m. The importance of correct seating and eye position.



32.2.4 INITIAL SIMULATOR TRAINING

32.2.4.1 General Requirements

- a. The operator's simulator training for low visibility operations shall include—
 - Checks of satisfactory functioning of equipment, both on the ground and in flight;
 - Monitoring of automatic flight control systems and auto land status annunciators with emphasis on the action to be taken in the event of failures of such systems; and
 - Actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems.
- b. An operator must ensure that each flight crew member is trained to carry out his duties and instructed on the co-ordination required with other crew members.
- c. Training must be divided into phases covering normal operation with no aircraft or equipment failures but including all weather conditions that may be encountered and detailed scenarios of aircraft and equipment failure which could affect CAT II or III operations. If the aircraft system involves the use of hybrid or other special systems (such as heads-up displays or enhanced vision equipment) then flight crew members must practice the use of these systems in normal and abnormal modes during the simulator phase of training.
- d. Incapacitation procedures appropriate to CAT II and III operations shall be practiced.

32.2.5 REQUIRED EXERCISES

32.2.5.1 CAT II and III training shall include at least the following exercises—

- a. Approaches using the appropriate flight guidance, autopilots and control systems installed in the aircraft, to the appropriate DH and to include transition to visual flight and landing;
- b. Approaches with all engines operating using the appropriate flight guidance systems, autopilots and control down to the appropriate DH followed by a missed approach, all without external visual reference;
- c. Where appropriate, approaches utilizing automatic flight systems to provide automatic flare, landing and roll out; and
- d. Normal operation of the applicable system both with and without acquisition of visual cues at decision height.

32.2.5.2 Subsequent phases of training must include at least—

- a. Approaches with engine failure at various stages on the approach;



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- b. Approaches with critical equipment failures (e.g. electrical systems, auto flight systems, ground and/or airborne ILS/MLS/GPS systems and status monitors);
 - c. Approaches where failures of auto flight equipment at low level require either:
 - d. Reversion to manual flight to control flare, landing and roll out or missed approach; or
 - e. Reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below DH including those that may result in a touchdown on the runway;
 - f. Failures of the systems which will result in excessive localizer and/or glide slope deviation, both above and below DH/AH, in the minimum visual conditions authorised for the operation.
 - g. In addition, a continuation to a manual landing must be practiced if a heads-up display forms a downgraded mode of the automatic system or the heads-up display forms the only flare mode; and
 - h. Failures and procedures specific to the aircraft type or variant.
- 32.2.3.3 The training programme must provide practice in handling faults that require a reversion to higher minima.
- 32.2.3.4 The training programme must include the handling of the aircraft when, during a CAT III approach, the fault causes the autopilot to fail at or below DH/AH when the last reported RVR is 1000ft (300m) or less.

32.3 FLIGHT CREW MEMBER QUALIFICATIONS – AOC HOLDERS

32.3.1 Prior to being authorised for unrestricted CAT II/III approaches—

- 32.3.1.1 The pilot conducting the approach shall have acquired the following as part of the line indoctrination training on the aircraft type being flown under the supervision of a qualified company training pilot or Check Pilot—
- a. For CAT II operations, a minimum of 3 manual landings from autopilot disconnect at DH; and
 - b. For CAT III operations, a minimum of 3 auto lands except that only 1 auto land is required if the simulator training had been completed in a Level D simulator;
- 32.3.1.2 The pilot conducting the approach shall have acquired a minimum of 100 hours or 20 sectors on the aircraft type, whichever is earlier, unless converting from a similar type aircraft (turbo-prop to turbo-prop or turbo-jet to turbo-jet) in which he/she had maintained a CAT II/III qualification to the same limits prior to conversion.
- 32.3.1.3 Upon completion of the line indoctrination training on the new aircraft, such pilots may be authorised for CAT II/III operations; and

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32.3.1.4 While acquiring the required experience and for an additional 100 hours or 20 sectors on type, whichever is earlier, 300 ft (90m) must be added to the applicable CAT II or III RVR unless:

32.3.1.5 The flight crew includes a qualified training pilot or a check pilot; or

32.3.1.6 He/she has been previously qualified for CAT II or III operations with a CAASL-FS approved operator.

32.3.2 Prior to a pilot conducting a CAT II/III approach—

32.3.2.1 He /she shall have completed the CAT II/III training within the preceding 12 months; and

32.3.2.2 He /she shall have been checked by a CAASL-FS Flight Operations Inspector or a check pilot within the preceding 6 months.

32.4 FLIGHT CREW MEMBER QUALIFICATIONS – GENERAL AVIATION

32.4.1 The pilot conducting the approach shall have completed the qualification requirements of this section under the supervision of another pilot qualified in CAT II/III operations on that aircraft type.

32.4.2 The pilot conducting the approach shall acquire the specified experience in paragraph 27.7.3, except that the RVR increase may be disregarded—

32.4.2.1 If the crew includes another pilot qualified in CAT II/III operations on that aircraft type or

32.4.2.2 The pilot has had previous CAT II/III experience in aircraft of a similar type.

32.4.3 The pilot shall, within the preceding 12 months prior to conducting a CAT II or III approach, have completed the CAT II/III training and been checked by a CAASL-FS Flight Operations Inspector.

32.5 CONVERSION TRAINING REQUIREMENTS

32.5.1 An operator shall ensure that each flight crew member completes the following CAT II/III training if converting to a new type or variant of aircraft in which CAT II and III operations will be conducted:

32.5.2 Ground Training. The appropriate initial training requirements, taking into account the flight crew member's CAT II and CAT III training and experience.

Simulator Training—

32.5.2.1 A minimum of eight (8) approaches and/or landings in a simulator approved for the purpose.

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32.5.2.2 Additional training if any special equipment is required that the pilot has no previous experience, such as heads-up displays or enhanced vision equipment.

32.6 SUPERVISED LINE FLYING

32.6.1 An AOC holder must ensure that each flight crew member undergoes the following line flying under supervision—

32.6.1.1 For CAT II, a minimum of three (3) landings from autopilot disconnect at DH; and

32.6.1.2 For CAT III, a minimum of three (3) auto lands except that only one auto land is required when the required simulator training has been varied out in a Level D flight simulator.

32.7 RECURRENT TRAINING & CHECKING

32.7.1 An operator must ensure that, in conjunction with the normal recurrent training and operator proficiency checks, a pilot's knowledge and ability to perform the tasks associated with the particular category of operation for which he is authorised is checked.

32.7.1.1 The required number of approaches to be conducted during such recurrent training is to be a minimum of two, one of which is to be a missed approach.

32.7.2 An operator must use a flight simulator approved for CAT II/III training.

32.7.3 An operator must ensure that, for CAT III operations on aircraft with a fail-passive flight control system, a missed approach is completed at least once every 18 months as the result of an autopilot failure at or below DH/AH when the last reported RVR was 1000ft (300m) or less.

32.8 CATEGORY II/III RECENCY REQUIREMENTS

32.8.1 An operator must ensure that, in order for pilots to maintain a CAT II or CAT III qualification, they have conducted—

32.8.1.1 A minimum of 3 approaches and landings using approved CAT II/III procedures during the previous six month period,

32.8.1.2 At least one of which must be conducted in the aircraft.

32.8.2 An operator may not substitute this recency requirement for recurrent training.

32.9 MANUAL REQUIREMENTS

32.9.1 AOC holders are required to amend their flight crew training manual to reflect their CAT II/III training programme.

32.9.2 In addition, a Company Operations Manual amendment will be required to establish the dispatch and operating procedures associated with CAT II/III.

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32.9.3 Finally, SOP amendments may be required, particularly if company procedures restrict the approaches to Captains only.

32.9.4 OPERATIONAL AUTHORISATION

32.9.4.1 After successful accomplishment of the training and all open discrepancies have been closed, the operator can be re-issued Section H of the operations specifications (AOC holder) or Letter of Authorization (General Aviation operator).

32.9.4.2 The CAASL-FS may impose higher minima than the lowest applicable for an additional period.

32.9.4.3 The increase in minima will normally only refer to RVR and/or a restriction against operations with no DH, and must be selected such that they will not require any change in the operational procedures.

32.10 OPERATIONAL AUTHORISATION WITH LIMITING FACTORS

32.10.1 After successful accomplishment of the training/checking and all open discrepancies have been closed, the operator can be issued an Ops Specs revision to include the LVTO authorization (for AOC holders) or Letter of Authorization (General Aviation). Demonstrated limiting factors that may be cited—

32.10.1.1 RVR 600; X-W 5 Kts

32.10.1.2 RVR 1200; X-W 10 Kts

32.10.1.3 RVR 1800; X-W 12 Kts

32.10.2 ENTERING THE AOC ORGANISATION AUTHORISATION

32.10.2.1 LVTO authorization to be entered in Ops specs.

32.11 MONITORING PROGRAMME

32.11.1 After obtaining the initial authorization, the operations must be continuously monitored by the operator to detect any undesirable trends before they can become hazardous.

32.11.1.1 Close liaison with the operator's maintenance personnel is required.

32.11.1.2 For AOC holders, the following information must be submitted to the Flight Operations Department and retained for a period of 12 months:

32.11.2 The total number of approaches, by aircraft type, where the airborne CAT II or III equipment was utilized to make satisfactory approaches (actual or practice) to the applicable CAT II/III minima;

32.11.3 Reports of unsatisfactory approaches and/or automatic landings, by aerodrome and aircraft registration, in the following categories—

32.11.3.1 Airborne equipment faults (these may be recorded through the Maintenance Reliability programme);

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- 32.11.3.2 Ground facility difficulties
- 32.11.3.3 Missed approaches because of ATC instructions; or other reasons.
- 32.11.4 An operator must establish a procedure to monitor the performance of the auto land system of each aircraft. This is usually accomplished through the Maintenance Reliability programme for AOC holders.



APPENDIX 32A



CIVIL AVIATION AUTHORITY OF SRI LANKA APPLICATION FORM FOR LVO APPROVAL

(AIRWORTHINESS & OPERATIONAL APPROVAL CONFORMANCE DOCUMENT)

REFERENCES		TITLE
EU 965/2012 (SPA.LVO)	10/2012	AIR OPS
ICAO 9365		MANUAL OF ALL –WEATHER OPERATIONS
Applicant / Operator		
Name		
Address		
Tel		Fax
Contact person for Airworthiness related items :		
Contact person for Operations related items :		
AIRCRAFT DETAILS		
Aircraft MFG		Aircraft Type/s
Registration Marks	MFG Serial No	Aircraft Series

CAASL Note : The followings Forms must be filled as appropriate and submitted as attachment to this Application Form by the Applicant: LVO FORMS: Form A1 - Form C2- Form F6- Form G1b- Form G3- Form G4- Form G5a- Form G5b.

PART I (AIRWORTHINESS)		
A). GENERAL INFO		
Previous Operating experience :		
Refer to duration of previous status for example CAT II for 12mo)		
(Refer to form LVO-A1 form for details on transitional period)		
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B). REQUESTED SCOPE OF APPROVAL

Approval for CAT II	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Approval for CAT III a	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Approval for CAT III b	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Approval for low visibility take-off below 150m RVR	YES <input type="checkbox"/>	NO <input type="checkbox"/>	

C). AIRCRAFT DESIGN APPROVAL

C1). The LVO type design approval is reflected in:

AFM:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Supplement type certificate:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
AFM supplement:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Type certification data sheet:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Other (specify):	YES <input type="checkbox"/>	NO <input type="checkbox"/>

[Note : Supporting documentation should be submitted as attachment to this conformance document]

C2). AFM shows following airworthiness approval for LVO systems installation:

CAT II ☐ CAT III a ☐ CAT III b ☐

[Note : Supporting documentation (for example appropriate Part of AFM) should be submitted as attachment to this conformance document]

(Refer to form LVO-C2 form for details of required equipment)

[Note : Supporting documentation should be submitted as attachment to this conformance document]

C3). The approval of the LVO systems installation is based on :

Type design:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
EASA/STC:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
FAA STC:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Service bulletin:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Major modification:	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Other:	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Note:

1) Identification of modifications, additions, and changes which were made to qualify aircraft systems for the intended operation or minima, if other than as specified in the AFM, TC or STC must be specified

2) Each aircraft should meet relevant criteria specified by the applicable aircraft manufacturer or avionics manufacturer for associated systems and equipment (e.g., Valid TC, appropriate STC records and compliance, assessment of status of any AD's, Service Bulletins or other compliance

[Note : Supporting documentation should be submitted as attachment to this conformance document]

D). MAINTENANCE PROGRAM



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D1). The operator should have an established maintenance program that contains all related maintenance requirements prescribed by the manufacturer

YES ☐ NO ☐

[Note: Provision for low visibility operations may be addressed as a specific program or may be integrated with the general maintenance program.]

[Note: Supporting documentation (for example appropriate tasks of AMP) should be submitted as attachment to this conformance document]

D2). The operator should have an established procedure to revise and update the maintenance program.

YES ☐ NO ☐

[Note : Supporting documentation (for example appropriate Part of CAME) should be submitted as attachment to this conformance document]

D3) Procedures for periodic maintenance of systems ground check, and systems flight check, as applicable. For example, following a heavy maintenance, suitable checks may need to be performed prior to return to service.

YES ☐ NO ☐

[Note : Supporting documentation should be submitted as attachment to this conformance document]

E). MEL

The applicant has revise relevant parts of the MEL to reflect system requirements appropriate for LVO (verify that MEL reflects equipment stated in AFM and/or MMEL)

YES ☐ NO ☐

[Note : Supporting documentation (for example appropriate Part of MMEL/MEL and AFM) should be submitted as attachment to this conformance document]

F). MAINTENANCE PRACTICES

The applicant must establish procedures for continuing airworthiness practices covering the following subjects F1a to F1d.

Note: Applicant should refer to manual reference –chapter. Supporting documentation should be submitted as attachment to this conformance document

F1). Actions for non-compliant aircraft

a. Down grading procedure

YES ☐ NO ☐

b. Technical log entries for downgraded aircraft or placarding

YES ☐ NO ☐



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[Note : Supporting documentation (for example appropriate TLS entries/Placards used) should be submitted as attachment to this conformance document]

The following topics should be covered :

F1a) Procedures which ensure aircraft remain out of lower minimum status until successful corrective action has been verified for chronic and repetitive discrepancies.

YES ☐

NO ☐

F1b) Procedures which ensure the aircraft system status is placarded properly and clearly documented in the aircraft log book, in co-ordination with maintenance control, engineering, flight operations, and dispatch, or equivalent.

YES ☐

NO ☐

F1c) Procedures to ensure the downgrade of an aircraft low visibility capability status, if applicable, when maintenance has been performed by persons other than those trained, qualified, or authorized to use or approve procedures related to low visibility operations.

YES ☐

NO ☐

F1d) Provisions for an aircraft to remain in a specific low visibility capability status (e.g., Category II, Category III, Fail-Operational, Fail Passive) or other designated operational status used by the operator.

YES ☐

NO ☐

F2). Periodic operational sampling

Provision should be made for periodic operational sampling of suitable performance. Typically, at least one satisfactory approach should have been accomplished within a specified period approved for that operator, unless a satisfactory systems ground check has been accomplished. A recording procedure for both satisfactory and unsatisfactory results should be included. Fleet sampling is not typically acceptable in lieu of specific aircraft assessment. Typically at least one satisfactory low visibility system operational use, or a satisfactory systems, go around check, should be accomplished within 30 days, for an aircraft to remain in Category III status. Any extension to an aircraft sampling period limit beyond 30 days, or use of statistical fleet sampling should be consistent with the manufacturer's current sampling recommendations and be based on the demonstrated reliability of that operator's aircraft flight guidance system performance in service. Failure of an operator to maintain an acceptable reliability record should result in timely and appropriate remedial action, and should lead to reconsideration of suitability of any sampling, period extensions or fleet statistical sampling authorisations.

YES ☐

NO ☐

[Note : Supporting documentation should be submitted as attachment to this conformance document]

F3). Defects Monitoring

Procedures which define, monitor and report chronic and repetitive discrepancies.

Note: Procedures which Identify, monitor and report lower minimum system and component discrepancies for the purpose of quality control and analysis must be established.

YES ☐

NO ☐

[Note : Supporting documentation should be submitted as attachment to this conformance document]

F4). Reliability program and evaluation

Define if Reliability Program performed in house or it is sub-contracted

In house : ☐

Sub-contracted : ☐

Refer to Reliability Manual Reference and HCAA Approval No.:

Reliability Manual reference :

Submit previous Reliability reports for the ATA chapters related to LVO (ATA 22/ATA 34/etc.



F5). Maintenance training

Initial-récurrent-qualification of maintenance personnel, etc.

General :

Initial and Recurrent Maintenance Training: Operator and contract maintenance personnel including mechanics, maintenance controllers, avionics technicians, personnel performing maintenance inspection or quality assurance, or other engineering personnel if applicable, should receive initial and recurrent training as necessary for an effective program. The training, curriculum should include specific aircraft systems and operator policies and procedures applicable to low visibility operations. Recurrent training should typically be accomplished at least annually, or when a person has not been involved in the maintenance of the specified aircraft or systems for an extended period (e.g., greater than 6 months). Training may lead to a certification or qualification (e.g., for lower landing minima "LLM") if the operator so designates such qualification in that operator's approved program.

YES ☐ NO ☐

[Note : Supporting documentation (for example Training Syllabus) should be submitted as attachment to this conformance document]

The training, should at least include, as applicable:

- a) An initial and recurrent training program for appropriate operator and contract personnel. Personnel considered to be included are maintenance personnel, quality and reliability groups, maintenance control, and incoming inspection and stores, or equivalent organisations.
- b) Subject areas for training should include: Operational concepts, aircraft types and systems affected, aircraft variants and differences where applicable, procedures to be used, manual or technical reference availability and use, processes, tools or test equipment to be used, quality control, methods for testing and return to service, sign-offs required, proper Minimum Equipment List (MEL) application, general information about where to get technical assistance, necessary co-ordination with other parts of the operator's organisation (e.g., flight operations, dispatch), and any other maintenance programme requirements unique to the operator or the aircraft types or variants flown (e.g., human factors considerations, problem reporting).
- c) Procedures for the use of outside vendors or vendor's parts that ensures compatibility to program requirements and for establishing, measures to control and account for the overall Quality Assurance and Parts. •
- d) Procedures to ensure tracking, and control of components that are "swapped" between systems for trouble shooting, when systems discrepancies cannot be duplicated. These procedures should provide for total system testing, and/or removal of aircraft from lower minimum status. •
- e) Procedures to assess, track and control the accomplishment of changes to components or systems pertinent to low visibility operations (e.g. AD's service bulletins, Engineering Orders and CAASL requirements if any).
- f) Procedures to record and report lower minimum operation(s) that are discontinued/interrupted because of system(s) malfunction. •
- g) Procedures to install, evaluate, control, and test system and component software changes, updates, or periodic updates. •
- h) Procedures related to the minimum equipment list (MEL) remarks section use which identify low visibility related systems and components, specifying limitations, up-grading and downgrading.

[Note: Supporting documentation should be submitted as attachment to this conformance document]

F6). OPS Procedure and forms

The operator must establish and use a suitable system for recording approach and/or automatic landing success and failure to monitor the overall safety of the operation (Refer **AMC 3 SPA.LVO.105**)

(Refer to form LVO-F6 Form for details)



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YES ☐ NO ☐

[Note : Supporting documentation (used form and guidance for completion) should be submitted as attachment to this conformance document]

F7). Test equipment used

(Use of test equipment-handling-calibration, etc.).

Test Equipment/Calibration Standards: Test equipment may require periodic re-evaluation to ensure it has the required accuracy and reliability to return systems and components to service following, maintenance. A listing, of primary and secondary standards used to maintain test equipment which relate to low visibility operations should be maintained. It is the operator's responsibility to ensure these standards are adhered to by contract maintenance organisations. Traceability to a national standard or the manufacturer's calibration standards should be maintained.

YES ☐ NO ☐

[Note : Supporting documentation (for example Test equipment used and calibration standards) should be submitted as attachment to this conformance document]

F8). Using contractors

Contract facilities or personnel should follow the operator's approved maintenance program to approve an aircraft for return to service: The operator is responsible for ensuring that contract organizations and personnel are appropriately trained, qualified, and authorized.

YES ☐ NO ☐

[Note : Supporting documentation should be submitted as attachment to this conformance document]

F9). Periodic Aircraft System Evaluations:

The operator should provide a method to continuously assess or periodically evaluate aircraft system performance to ensure satisfactory operation for those systems applicable to Category II or III. An acceptable method for assuring, satisfactory performance of a low visibility flight guidance system (e.g., auto land or HUD) is to periodically use the system and note satisfactory performance. A reliable record such as a logbook entry or computer ACARS record showing satisfactory performance within the previous 6 months for Category II, or previous 30 days for Category III, is typically an acceptable method for assuring satisfactory system operation

YES ☐ NO ☐

[Note : Supporting documentation should be submitted as attachment to this conformance document]

F10) Reliability Reporting and Quality Control

For a period of 1 year after an applicant has been authorised for reduced minima, a monthly summary should be submitted to the HCAA. The following information should be reported:

a) The total number of approaches tracked, the number of satisfactory approaches tracked, by aircraft/system type, and visibility (RVR), if known or recorded.

b) The total number of unsatisfactory approaches, and reasons for unsatisfactory performance, if known, listed by appropriate category (e.g., poor system performance, aircraft equipment problem/failure; ground facility problem, ATS handling, lack of critical area protection, or other).

c) The total number of unscheduled removals of components of the related avionics systems.

d) Reporting after the initial period should be in accordance with the operators established reliability and reporting requirements.

[Note : Supporting documentation should be submitted as attachment to this conformance document]

PART II (OPERATION)

G1) Approach plate supplier (define the following)

G1a) Refer to your approach plate supplier?

G1b) Eligible runways. Confirmation that all minima are calculated in accordance with CAT.OP.MPA.110

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(Refer to form LVO0G1b Form for details)

[Note : Supporting documentation (for example appropriate Part of applicant Operation Manual) should be submitted as attachment to this conformance document]

G2) Operations Manual entries and Standard Operating Procedures.

The Operations Manual should refer to :
 Definitions of LVOPS.
 Crew qualifications for LVOPS operations.
 Equipment required for LVOPS operations.
 MEL handling.
 Low Visibility Take-Off:

- Taxiing in low visibility conditions.
- Take-off minima and lighting.
- Crew visual visibility assessment.
- Crew responsibilities/handling.
- Visual references required.
- Approved lateral guidance system.
- ATC calls.
- Contingency procedures including:
- Engine failure between V1 and VR; and
- rejected take-off.

[Note : Supporting documentation (for example appropriate Part of applicant Operation Manual) should be submitted as attachment to this conformance document]

G3) Operations Manual entries and Standard Operating Procedures.

Approach and landing:

- Modes and operation.
- Statement that autopilot/flight director must be used whenever possible.
- LVOPS fuel considerations.
- Minimum visual references for landing.
- Approach Ban and RVR.
- Limitations - Cross-wind limits etc. (Refer to form LVO-G3 Form for details)
- Effect of irregular pre-threshold terrain.
- Stabilised Approach Criteria.
- Correct seating and eye position.
- Designation of PF and PNF and their duties.
- Use of automatic flight control system.
- Checklist handling.
- Approach briefing.
- Radio communications handling.
- Monitoring and cross-checking of instruments and radio aids.
- Cockpit call outs.
- Contingency procedures including:
- Use of equipment downgrade list;
- Failures above and below decision height;
- ILS deviation warnings;
- Autopilot disconnect;
- Auto-throttle disconnect;
- Electrical failures;
- Engine failure;
- Failures and loss of visual references at or below decision height; and
- Pilot incapacitation.

[Note : Supporting documentation (for example appropriate Part of applicant Operation Manual) should be submitted as attachment to this conformance document]

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G4) Ground school training

Syllabus should follow guidelines in , in particular Subpart E (should also include all the items in paragraph G3 above
(Refer to form LVO-G4 form for details)

[Note : Supporting documentation (for example Training Syllabus) should be submitted as attachment to this conformance document]

G5) Flight crew qualification and training (simulator/flight training)

a) Syllabus should follow guidelines in AMC1 SPA.LVO.120

b) Initial qualification requirements. Recurrent/revalidation requirements. Recency requirements.

(Refer to form LVO-G5a Form for details)

(Refer to form LVO-G5b Form for details)

[Note : Supporting documentation should be submitted as attachment to this conformance document]

Applicant Statement

The undersign certifies the above information to be correct and true and that aircraft system installation, continuing airworthiness of systems, minimum equipment for dispatch, technical staff training comply with EU 965 /Sub Part E (SPA. LVO).

SIGNATURE

NAME MAINTENANCE MANAGER:

NAME FLIGHT OPS MANAGER:

NAME TRAINING MANAGER:

DATE OF APPLICATION: ____/____/____



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CAT II/III Approval Evaluation Check list (Operations)

Operator Name:

Date:

Application for:

CAT II/CAT III Authorization

Previous CAT II:

Yes/No

CAT III:

Yes/No

New Aircraft to operator:

Yes/No

Upgraded equipment on existing aircraft: Yes/No

Y = YES

N = NO

NS = NOT SEEN

NA = NOT APPLICABLE

<i>Check YES column if you reviewed the record, procedure or event and have no comment</i>
<i>Check NO column if you reviewed the record, procedure or event and have a comment</i>
<i>Check NOT SEEN column if you did not review the record, procedure or event or you do have adequate information to make a valid comment</i>
<i>Check NOT APPLICABLE column if the line item is not required in this particular Operator</i>
<i>Make notes regarding a NO answer for resolution</i>

Y	N	NS	NA	1	OPERATOR PROCEDURES
				1.1	Type of Operation
				1.2	CAT II and CAT III Instrument Approach Procedures
				1.3	AFM/FOM/POH/QRH Provisions, as applicable
				1.4	Crew Coordination and Monitoring Procedures
				1.5	Callouts
				1.6	Use of DA (H) [Fail Passive])
				1.7	Use of Alert Height (AH)[Fail Operational]
				1.8	Crew Briefings
				1.9	Configurations
				1.10	Non-Normal Operations and Procedures
				1.11	Special Environmental Considerations (as applicable)
				1.12	Continuing CAT II/ III Approaches in deteriorating weather
				1.13	Dispatch Planning and MEL/CDL Requirements
				1.14	Aircraft System Suitability Demonstration (as required)
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				1.15	Operator Use Suitability Demonstration (OUSD)
				1.16	Data Collection/Analysis for Airborne System Demonstrations
				1.17	Operational Procedure for Return to Service (RTS)
Y	N	NS	NA	2	TRAINING AND CREW QUALIFICATION
				2.1	Initial Training
				2.2	Recurrent Training/Qualification
				2.3	Upgrade Training
				2.4	Requalification Training
				2.5	Recency of Experience
				2.6	Differences Training
				2.7	Simultaneous Training and Qualification for Cat II and III
				2.8	Ground Training Curriculum Segment
				2.9	SMGCS Training
				2.10	Flight Training Curriculum Segment
				2.11	Manoeuvres and Procedures Document
				2.12	Initial Qualification
				2.13	Low Visibility Takeoff Qualification
				2.14	Multiple Aircraft Type or Variant Qualification (as applicable)
				2.15	Special Terrain Airports (as applicable)
				2.16	High Minimums Captain Procedures
				2.17	Line Checks
				2.18	Crew training Records
Y	N	NS	NA	3	AIRPLANE AND EQUIPMENT
					Airborne Systems for Cat II
					Airborne Systems for Cat III
					Automatic Flight control and Landing Systems
					Flight Director Systems
					Enhanced/Synthetic Vision Systems
					Hybrid Displays



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					Required Navigation Performance (RNP) (as required)
Y	N	NS	NA	4	OPERATIONS SPECIFICATIONS
				4.1	Issuance of CAT II/III Minima in OpSpec/MSpec/LOA
Y	N	NS	NA	5	OPERATOR'S DOCUMENT APPLICATION PACKAGE
				5.1	Aircraft Operations Manual (Pertinent parts)
				5.2	Flight Operations Manual (Pertinent parts)
				5.3	Compliance Documents
				5.4	Flight Operations Training Manual
				5.5	Requested OpSpec/MSpec/LOA
				5.6	Implementation Timetable
				5.7	Minimum Equipment List (MEL)
				5.8	Operator Use Suitability Demonstration (Simulator/Aircraft)
				5.9	Application Letter
Date:					Inspector's Signature:



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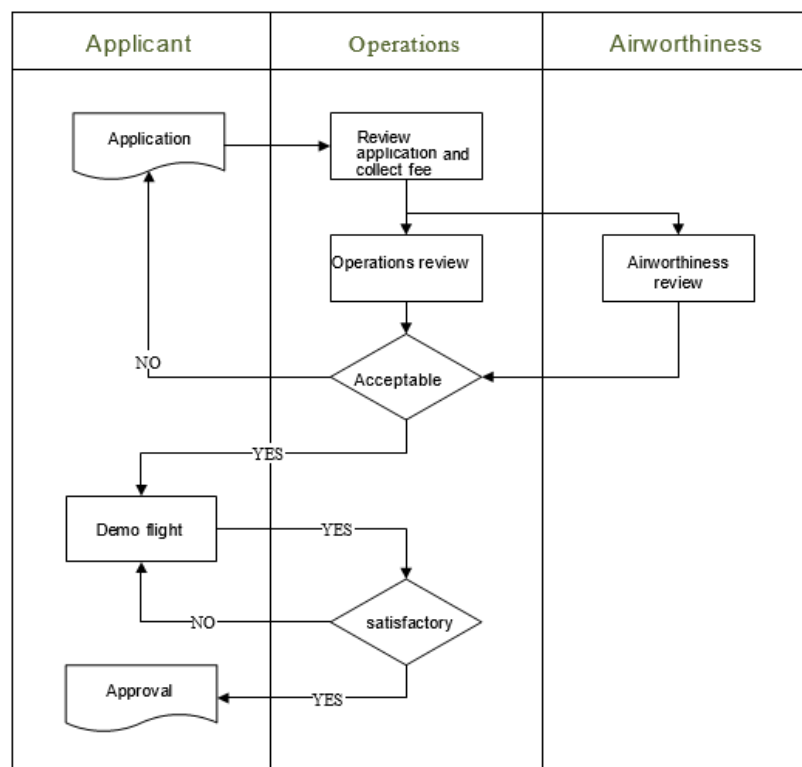
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AWOPS APPROVAL

PURPOSE

This procedure gives guidance and instructions on how to review and approve Sri Lankan operators for All Weather Operations or Low Visibility Operations.

OVERVIEW



APPLICATION

Applications form, CAASL form 1828 must be filled for Operators applying to add AWOPS to their Operations Specifications. The approval process will be in collaboration with Airworthiness section. The fees subscribed under MCAR 187 Aviation Charges must be taken along with the application.



OPERATIONAL REVIEW

All operational aspects of the application shall be checked by the Operations section. The following list gives the major areas that are reviewed by the Operations section:

- 1) Flight preparation and inflight procedures
- 2) Training programs for flight crew and ops control personnel.
- 3) Operations manual amendment/supplement.
- 4) Proving flight

AIRWORTHINESS REVIEW

All airworthiness and reliability aspects of the application must be checked by the Airworthiness section. Airworthiness related items of Section IV of CAASL form 1828 shall be checked by the Airworthiness Inspector. Once Airworthiness has finished their review, the reviewing Inspector shall sign the application.

APPROVAL

Final approval is given by the Operations section after the SOP checklist has been filled and application has been signed by both Airworthiness and Operations Inspectors. Approval process is completed when the all manuals have been approved and the Operations Specification of the applicant has been updated and filed.

SURVEILLANCE

Surveillance of approved AWOPS are carried in accordance with Volume 3 of the Flight Operations Inspector Handbook. Airworthiness section shall review reliability reports of operators to ensure that reliability of the auto-land system remains within acceptable range



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AWOPS APPROVAL CHECK LIST

Operator Name		AOC No.					
a	Application reviewed and accepted	YES		NO		NA	
b	Section IV of application – operations satisfactory?	YES		NO		NA	
c	Operations manual amendment/supplement approved?	YES		NO		NA	
d	MEL/CDL reviewed and approved for AWOPS operations?	YES		NO		NA	
e	Training programs for pilots and Dispatchers acceptable?	YES		NO		NA	
f	Competent operational staff available?	YES		NO		NA	
g	Application reviewed and signed by airworthiness inspector?	YES		NO		NA	
h	AWOPS proving flight carried out?	YES		NO		NA	
i	Findings corrected?	YES		NO		NA	
j	Operations Specifications updated?	YES		NO		NA	
k	All documents filed?	YES		NO		NA	
OPS Inspector		AWS Inspector					
Signature _____ Date _____		Signature _____ Date _____					



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Chapter 33 - LOWER-THAN-STANDARD TAKE-OFF MINIMA APPROVAL

33.1 GENERAL

33.1.1 This chapter contains criteria to be used by operations inspectors when asked to approve lower-than-standard take-off minima for AOC holders or individual operators.

33.1.1.1 When the criteria for approval are met, a revision to the operations specifications will be issued to include any requirements regarding pilots, aircraft and aerodromes when lower-than-standard take-off minima are used.

33.1.1.2 If an operator is not authorised to use lower-than-standard take-off minima, this authorization will not appear in their Ops Specs.

33.1.2 The ANRs require that an operator's aircraft may only take off in weather conditions that are at or above those published for the departure airport.

33.1.2.1 The normal minimum visibility for take-off is $\frac{1}{2}$ statute mile, which equates to a Runway Visual Range (RVR) of 2600ft or 2400ft in some countries (approximately 790/730m).

33.1.2.2 However, the published value may be greater, in which case the higher value is to be observed.

33.2.2.3 Take-off minima below the standard may be approved down to as low as RVR 600 (approximately 180m).

33.2 TRAINING

33.2.1 GENERAL

33.2.1.1 Operators requesting lower-than-standard take-off minima shall develop flight crew member initial and annual recurrent training programme for low visibility operations that include structured courses of ground, simulator and/or flight training.

33.2.1.1 Flight crew members with no previous lower-than-standard take-off visibility experience must complete the full training programme prescribed in this section.

33.2.2 INITIAL GROUND TRAINING

33.2.2.1 Operators requesting lower-than-standard take-off minima shall provide an initial ground training course for low visibility operations that covers at least the following subject elements—

- a. The aircraft requirements to conduct CAT II/III approaches;
- b. The ground system requirements to conduct CAT II/III approaches;
- c. The characteristics of the visual aids;
- d. The characteristics of fog;

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- e. The operational capabilities and limitations of the particular airborne system;
- f. The effects of precipitation, ice accretion, low level wind shear and turbulence;
- g. The effect of specific aeroplane malfunctions;
- h. The use and limitations of RVR assessment systems;
- i. The principles of obstacle clearance requirements;
- j. Recognition of and action to be taken in the event of the failure of ground equipment;
- k. The procedures and precautions to be followed with regard to surface movement during operations when the RVR is 1200ft or less (approximately 365m) and any additional procedures required for take-off in conditions as low as RVR 600 (approximately 180m);
- l. The qualification requirements for pilots to obtain and retain approval to conduct low visibility take-offs;
- m. The importance of correct seating and eye position; and
- n. Take-off alternate requirements.

33.2.3 INITIAL SIMULATOR TRAINING & AIRCRAFT TRAINING

33.2.3.1 The operator's simulator and/or initial flight training for low visibility operations shall include events that demonstrate the following—

- a. Checks of satisfactory functioning of equipment, both on the ground and in flight;
- b. Effect on minima caused by changes in the status of ground installations;
- c. Actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems;
- d. The effects of known unserviceabilities and the use of minimum equipment lists;
- e. Operating limitations resulting from airworthiness certification;
- f. Rejected take-offs in a low visibility environment appropriate to that being sought;
- g. Engine failure at V1 in the lowest visibility being sought;
- h. Taxing in a low visibility environment with emphasis on preventing runway incursion; and
- i. Appropriate additional training if any special equipment is required such as heads-up displays or enhanced vision equipment.

33.2.3.2 Training must be divided into phases covering—

- a. Normal operation with no aeroplane or equipment failures but including all weather conditions that may be encountered, followed by
- b. Detailed scenarios of aeroplane and equipment failures that could affect operations.

33.2.3.3 An operator must ensure that each flight crew member is trained to carry out his/her duties and instructed on the co-ordination required with other crew members.

- a. This training must include the use of any special procedures and equipment.

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33.2.3.4 Incapacitation procedures appropriate to Low Visibility Take-Offs (LVTO) shall be practiced.

33.3 FLIGHT CREW MEMBER QUALIFICATIONS

33.3.1 INITIAL QUALIFICATION

33.3.1.1 Prior to being authorised for lower-than-standard take-offs, the pilot conducting the takeoff shall have acquired a minimum of 100 hours on the aircraft type

- a. Unless converting from a similar type aircraft (turbo-prop to turbo-prop or turbo-jet to turbo-jet) in which he/she had maintained a low visibility take-off qualification at the same limits for at least 90 days prior to conversion.

33.3.1.2 Prior to conducting a lower-than-standard take-off, within the preceding 12 months—

- a. Each pilot shall have completed the low visibility training; and
- b. Pilots authorised to conduct RVR 600 take-offs shall have been checked by a Flight
- c. Operations Inspector or a check pilot.

33.3.2 RECURRENT TRAINING

33.3.2.1 An operator must ensure a pilot's knowledge and ability to perform the tasks associated with LVTO are maintained.

33.3.2.2 The recurrent flight training shall include at least one low visibility rejected take-off and a take-off to the lowest applicable minima approved.

33.3.3 LVTO RECENCY REQUIREMENTS

33.3.3.1 Recency for LVTO is maintained by the requirement for annual recurrent training.

33.4 MANUAL REQUIREMENTS

33.4.1 AOC holders are required to amend their flight crew and flight dispatcher training manuals to reflect their LVTO training programme.

33.4.2 In addition, a Company Operations Manual amendment will be required to establish the dispatch and operating procedures associated with LVTO.

33.4.3 Finally, SOP amendments may be required, particularly if company procedures restrict the takeoff to Captains only.

33.5 ISSUE OF OPERATIONAL AUTHORIZATION

33.5.1 OPERATIONAL AUTHORISATION WITH LIMITING FACTORS

33.5.1.1 After successful accomplishment of the training/checking and all open discrepancies have been closed, the operator can be issued an Ops Specs revision to include the LVTO

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authorization (for AOC holders) or Letter of Authorization (General Aviation). Demonstrated limiting factors that may be cited—

- a. RVR 600; X-W 5 Kts
- d. RVR 1200; X-W 10 Kts
- e. RVR 1800; X-W 12 Kts

33.5.2 ENTERING THE AOC ORGANISATION AUTHORISATION

33.5.2.1 Ops specs to include LVTO authorization



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Chapter 34 - MINIMUM NAV PERFORMANCE SPECIFICATION (MNPS) AIRSPACE

34.1 GENERAL

- 34.1.1 In an effort to maximize the use of airspace, ICAO and individual States have established areas wherein reduced aircraft separation criteria apply based on the operator's ability to navigate with greater degrees of accuracy than was previously possible. These areas have been termed MNPS airspace.
- 34.1.2 The navigation accuracy standard used by most States and ICAO is that developed for the North Atlantic (NAT) MNPS airspace. The criteria used to obtain approval to use NAT MNPS airspace is contained in the US FAA AC 120-33, *Operational Approval of Airborne Long-Range Navigation Systems for Flight within the North Atlantic Minimum Navigation Performance Specifications Airspace*. AC 120-33 (as amended), or its equivalent, remains the basis for approval to use most MNPS airspace.
- 34.1.3 ICAO requires operators to obtain approval from their CAASL-FSSD before conducting any operations within such airspace (Annex 6 requires approval by the State of Registry of the aircraft). However, when aircraft are leased to operators in another State, the State of the operator is normally considered the State to issue the approval.

34.2 CAASL-FS APPROVAL

- 34.2.1 This section contains the basic guidance to be used by the CAASL-FS to approve an operator's request to operate in MNPS airspace.
- 34.2.2 When the criteria for approval are met—
- A revision to Section H of the ops specs will be issued (AOC holder), or
 - An LOA (General Aviation) will be issued,
 - Either of these document must contain the performance specification, define the airspace boundaries and list the aircraft that have been approved, by type (make, model, series) and their navigation equipment.

34.2.3 DEMONSTRATION FLIGHT

- 34.2.3.1 After the AOC holder has accomplished its training, at least one demonstration flight must be conducted.
- The test(s) will evaluate the AOC holder's procedures and knowledge of operations within MNPS airspace.
 - A Flight Operations Inspector shall conduct an en-route inspection with special emphasis on the AOC holder's MNPS training subject areas.
 - The crew should be a randomly picked line crew and shall be tested on general knowledge and the various contingencies that can occur in the airspace.

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34.2.4 AOC GENERAL INSPECTION DATABASE ENTRY

- 34.2.4.1 Following the successful conclusion of the demonstration flight for an AOC holder, a new record will be entered in the GID for that organization to include the authorization and will be included in necessary CAASL records.

34.2.5 OPERATIONAL AUTHORISATION

- 34.2.5.1 After all open discrepancies have been closed, the—
- AOC holder must be issued a revision to Ops Specs Section H to include the RVSM authorization.
 - General Aviation Operator must be issued a Letter of Authorization (General Aviation).

34.3 NAVIGATION EQUIPMENT

- 34.3.1 An assessment will be made to determine if the equipment is appropriate for the route to be flown and the operator's manuals, procedures and training programme are adequate.
- 34.3.2 Navigation equipment must be approved and installed in accordance with the aircraft's type certificate (TC), a supplemental type certificate (STC) or an acceptable method approved by another ICAO State.
- 34.3.3 In any case, co-ordination should be accomplished with an Airworthiness Inspector to ensure it is operational and installed correctly and that maintenance programme and training are adequate.

34.4 OPERATIONS MANUAL

- 34.4.1 An AOC holder's Operations Manual must provide specific pre-flight, in-flight and post-flight procedures as well as crewmember procedures for the verification of waypoint entry information and other procedures to preclude navigation errors.
- 34.4.2 The Training Manual must include requirements for training and checking crewmembers on its operational use.

34.5 TRAINING

34.5.1 GROUND TRAINING

- 34.5.1.2 AOC holder's requesting to operate within MNPS airspace shall provide its flight crew members with the following information and ground training—
- The MNPS "Specification" and what it means, including the historical concept of MNPS airspace and the horizontal separation standard;
 - The geographical boundaries of MNPS airspace and route structures/systems within and around it;



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34.5.2 FLIGHT/SIMULATOR TRAINING

34.5.2.1 Flight/simulator training requirements shall be completed prior to approval for flight operations within MNPS airspace being granted.



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Chapter 35 - EXTENDED RANGE TWIN ENGINE OPERATIONS (ETOPS/EDTO)

35.1 GENERAL

35.1.1 This chapter contains some of the criteria to be used by the CAASL-FSSD before authorizing ETOPS operations for air carrier operators.

35.1.2 However, the basic criteria used to obtain approval may be found in IS 013, “ETOPS Certification.”

- a. ICAO Annex 6 requires approval by the state of registry of the aircraft; however, when aircraft are leased to operators in another state, the state of the operator is normally considered the state to issue the approval.
- b. When the criteria for approval are met, Section H of the operations specifications will be reissued authorizing the ETOPS operations of the specific MMS aircraft citing the company documentation that must be followed by the company.

35.1.3 The operator must list the aircraft type, registration and/or serial number, which are ETOPS approved in accordance with the appropriate maintenance requirements, including—

- a. Aircraft/propulsion system combination,
- b. Specific systems and components,
- c. MEL and
- d. Communication and navigation systems.

35.2 OPERATIONS MANUAL REQUIREMENTS

35.2.1 The operator’s Operations Manual must provide specific pre-flight requirements and procedures, including ETOPS in MNPS airspace and in-flight normal and abnormal procedures.

35.2.2 Communication and navigation procedures shall be included covering ETOPS flight planning and position plotting requirements.

35.2.3 A section specific to dispatch requirements shall be included covering MEL issues, fuel and oil supply, alternate aerodromes, aircraft performance data, weather, weather minima, flight and navigation, NOTAMs and flight watch procedures, including communication.

35.3 TRAINING MANUAL REQUIREMENTS

35.3.1 The operator’s Training Manual shall include requirements for training and checking of dispatch personnel and flight crew members on ETOPS operations.

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35.3.2 GROUND TRAINING

35.3.2.1 Operators requesting ETOPS operational approval shall provide its dispatch and flight crew members with at least the following information and ground training—

- a. The concepts and requirements of ETOPS, including the company procedures with respect to these requirements;
- b. A full glossary of ETOPS-specific terms and their definitions;
- c. ETOPS dispatch and MEL requirements, including considerations following previous equipment failures;
- d. Flight planning and navigation documentation and procedures specific to ETOPS;
- e. Weather and minima requirements with specific emphasis on enroute alternates;
- f. En-route alternate aerodrome selection criteria;
- g. Fuel requirements, including minimum requirement, contingency fuel reserve and critical fuel scenarios;
- h. MMNPS procedures and requirements;
- i. Abnormal and emergency (contingency) procedures and diversion procedures, including
- j. procedures for single and multiple equipment failures in flight and the operational restrictions with these failures;
- k. The use of performance data on one-engine inoperative; and
- l. Communication procedures.

35.3.3 SIMULATOR/FLIGHT TRAINING

35.3.3.1 The operator's simulator training programme shall include a dedicated ETOPS critical scenario covering an engine failure and/or emergency depressurization and associated decision making criteria.

35.3.3.2 MNPS procedures for in-flight contingencies and navigation cross-check procedures shall be reviewed in either the simulator training or during flight training.

35.3.3.3 Flight training under supervision shall consist of four sectors over an ETOPS route the last of which can be a check flight.

35.3.3.4 It is recommended that dispatchers be given a minimum of two flight sectors as observers for the purpose of familiarization.



35.3.4 DEMONSTRATION FLIGHT

- 35.3.4.1 Prior to ETOPS approval, an operator will be required to validate its ETOPS training, dispatch and operational procedures through a demonstration to the CAASL-FSSD of the following—
- 35.3.4.2. The conduct of at least one ETOPS flight in a simulator on a route representative of one to be flown by the operator, including a failure En-route requiring a descent and diversion to the En-route alternate; and
- 35.3.4.3 An actual ETOPS flight.
- The entire operation must be assessed including dispatch, pre-flight planning and briefing and the conduct of the flight.
 - This demonstration flight may, at the discretion of the CAASL-FSSD, be a revenue or non-revenue flight.
 - If a diversion is not required, a simulated emergency will be introduced to determine the capabilities of the dispatcher and flight crew and to test the communications network.
- 35.3.4.4 Operators with ETOPS authority adding a new aircraft will be required to gain a minimum of three months of operating experience with the aircraft prior to applying for its addition to the ETOPS approval, before the conduct of the actual ETOPS validation flight.



APPENDIX 35 A



CIVIL AVIATION AUTHORITY OF SRI LANKA

APPLICATION FOR EXTENDED DIVERSION OPERATIONS (EDTO) APPROVAL

Applicability: EDTO Operations in accordance with SLCAIS 062 Approval.

Completion of form: Please complete those fields that are relevant to your aircraft and operations.

Each relevant box should be completed with a tick (v) or a (x). Items marked with an asterisk (*) to be completed only for first aeroplane of each aeroplane type / model in operator's fleet. Where form must be completed by referring to a document of applicant's documentation of system, add manual reference chapter and sub-chapter. Please ensure all applicable areas are completed. One form to be completed for each Airplane Serial No.

Application Accuracy of information provided. All information will be used to assess EDTO compliance. An incomplete, poorly prepared or inaccurate application may:

- Result in rejection of the application
- Result in delays
- Add to the cost of the assessment
- Result in a refusal to issue the approval

Note: It is an offence to make a false declaration in this form.

Submit the form and application package to

DGCA
Civil Aviation Authority of Sri Lanka,
No.152/1,
Minuwangoda Road,
Katunayake.

1. GENERAL
General information
1. Applicant:
2. Aeroplane Registration:
3. Aeroplane Manufacturer:
4. Aeroplane Type Designation / Model Designation:
5. Aeroplane Serial No:
6. Engine Manufacturer:
7. Engine Type Designation / Model Designation:



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8. APU Manufacturer:		
9. APU Type Designation:		
Scope of application	Yes	No
10. Application for EDTO 75 minutes?	<input type="checkbox"/>	<input type="checkbox"/>
11. Application for EDTO 120 minutes?	<input type="checkbox"/>	<input type="checkbox"/>
12. Application for EDTO 180 minutes?	<input type="checkbox"/>	<input type="checkbox"/>
13. Initial request for EDTO approval for aeroplane type/model reference in 1.4?	<input type="checkbox"/>	<input type="checkbox"/>
14. Application for accelerated EDTO?	<input type="checkbox"/>	<input type="checkbox"/>
15. Application is based on CMP Document No: Revision number: _____ Revision date: ____/____/____		
2. AIRWORTHINESS		
Type Design Approval for referenced Aeroplane Type Designation		
1. The EDTO type design approval is reflected in : <input type="checkbox"/> AFM <input type="checkbox"/> AFM Supplements <input type="checkbox"/> Type Certification Data Sheet <input type="checkbox"/> Supplemental Type Certificate <input type="checkbox"/> Other:		
2. The Airplane Flight Manual / Supplement shows following airworthiness approval for EDTO systems installation: EDTO _____ minutes		
Eligibility for referenced Aeroplane Serial Number	Yes	No
3. Do you comply with the title and numbers of all modifications, addition and changes which were made in order to substantial the incorporation of the CMP standard in the aeroplane?	<input type="checkbox"/>	<input type="checkbox"/>
4. CMP Compliance list established?	<input type="checkbox"/>	<input type="checkbox"/>

Applicant's Experience and Propulsion System Reliability (*)		
5. Number of month/years of operational experience with specific engine/airframe combination Experience:		
6. Total number of long range and/or domestic operations conducted with specific engine/airframe combination: Number of domestic legs: Number of long range legs		
7. Total number of engine/airframe hours and with cycles specific engine/ airframe combination: Total operator's airframe fleet hours: Total operator's airframe fleet cycles: Total operator's engine hours: Hours of operator's high time engine:		
8. In flight shutdown (FSD) rate (all causes), including the 12 month rolling average for both operator and the world fleet (IFSD per 1,000 engine flight hours). IFSD rate of operator's fleet: IFSD RATE of world fleet:		
9. Unscheduled engine removal rate (URR) for both operator and the world fleet (URR) rate per 1,000 engine flight hours): URR of operator's fleet: URR of world fleet:		
10. Records of mean time between failures (MTBF) for major components available? (unit flight hours / number of unit failure)	ii) Yes	No
	iii) <input type="checkbox"/>	<input type="checkbox"/>
11. Records of APU start and run reliability available?	<input type="checkbox"/>	<input type="checkbox"/>



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12. Records of delays and cancellations, with the causes, by specific aeroplane systems, available?	<input type="checkbox"/>	<input type="checkbox"/>
13. Records of the following significant operator events where available? (Including the phase of flight where the event occurred): Uncommented power changes? (surge or rollback) Inability to control engine or obtain desired power? In flight shutdown events?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Supplement to the Maintenance Program and Maintenance Procedures (*)		
The applicant is required to establish the following procedures:	<i>1.1.1.a.iii..1 To be completed by applicant</i> The procedures are described in (add manual reference, chapter and sub-chapter, e.g. CAME 16.4.1)	
14. Procedures to preclude simultaneous actions from being applied to multiple similar elements in any EDTO critical system.		
15. Procedures describing the involvement of centralized maintenance control over EDTO related tasks.		
16. EDTO pre-departure service check for verifying the status of the aeroplane and ensuring that certain critical items are acceptable.		
17. Procedures for reviewing and documenting of log books to ensure proper MEL procedures, deferred items and maintenance checks and that system verification procedures have been property performed.		
18. The specific ETOPS maintenance tasks identified by the (S) TC holder in the Configuration, Maintenance and Procedures document (CMP) or equivalent should be included in the maintenance programme and identified as ETOPS tasks.		
19. The maintenance programme should include tasks to maintain the integrity of cargo compartment and pressurisation features, including baggage hold liners, door seals and drain valve condition. Processes should be implemented to		
EDTO Maintenance Manual The applicant should develop a manual for use by personnel involved in EDTO. The purpose of the EDTO Manual is to identify the supplementary procedures and requirements for EDTO operations. This manual should contain the following procedures:		
iv) Engine/APU Oil Consumption Monitoring Program	v)	
20. Procedures that monitor oil consumption rates for engines and APU for EDTO and non-EDTO flights.		
21. Procedures for calculating oil consumption rate prior to departure to address any sudden shift in consumption		
22. Procedures for monitoring of long term data for increasing trends.		



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vi) Engine Condition Monitoring Program	vii)
23. Procedures for detecting deterioration of engines at an early stage to allow for corrective action before safe operation is affected.	
24. Parameters to be monitored, method of data collection and corrective action process.	
25. Procedures for engine limit margin monitoring to ensure that a prolonged single-engine diversion may be conducted without exceeding approved engine limits	
Verification Program after Maintenance	
26. List of primary systems critical to EDTO	
27. Conditions that require verification flights.	
28. Procedures for initiating verification actions.	
29. Procedures that ensure corrective action are taken after engine shut-down and any other significant failure	
30. Procedures that identify and reverse adverse trends	
31. Procedures that preclude repeat items from occurring.	
32. Procedures that monitor and evaluate corrective actions.	
33. Procedures that preclude simultaneous actions from being applied to multiple similar elements in any EDTO-critical system.	
Reliability Program	
34. Event-oriented program for EDTO, in addition to the normal reliability program, to allow early identification and prevention of EDTO problems.	
35. Procedures to ensure reporting of significant individual events (in-flight-shut-downs, flight diversions or turn-back, un-commanded power changes or surges inability to control the engine or obtain desired power, problems with systems critical to EDTO and any other event detrimental to EDTO.	
36. Reporting criteria for the reporting to the Authority of events reportable through this program.	
37. Procedures for down-grade/up-grade criteria (diversion time).	
38. Procedures for monitoring of APU high altitude in-flight start and run capability.	
Propulsion System Monitoring Program	
39. Procedures for the monitoring of propulsion system in flight shutdown (IFSD) rate, evaluation of sustained trends and corrective actions.	



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40. Procedures for the monitoring of long term IFSD trends (12 month moving average).	
41. Reporting criteria for the assessment of propulsion system reliability and monthly reporting to the Authority of results of operator's assessment.	
Maintenance Training Program	
42. Training programs to ensure each person, including contract personnel, involved in EDTO is adequately trained on operator's EDTO procedures and is competent to perform his/her duties (EDTO awareness training).	
43. Procedures for ensuring that maintenance personnel have completed EDTO awareness training and have satisfactorily performed EDTO maintenance tasks under supervision, within the framework of approved procedures for personnel Authorisation, in MOE	
Parts Control Program	
44. Procedures that ensure that proper EDTO parts are used and EDTO configuration is maintained.	
45. Control procedures for parts pooling and borrowing.	

CONTINUING AIRWORTHINESS MANAGEMENT EXPOSITION

1. The CAMO should develop appropriate procedures to be used by all personnel involved in the continuing airworthiness and maintenance of the aircraft, including supportive training programmes, duties, and responsibilities.	
2. The CAMO should specify the procedures necessary to ensure the continuing airworthiness of the aircraft particularly related to ETOPS operations. It should address the subjects listed in Appendix 8 as applicable.	
3. The CAMO organization should ensure that the personnel involved in the continuing airworthiness management of the aircraft have knowledge of the ETOPS procedures of the operator.	
4. The CAMO should ensure that maintenance personnel that are involved in ETOPS maintenance tasks have completed an ETOPS training programme reflecting the relevant ETOPS procedures of the operator.	
5. Have satisfactorily performed ETOPS tasks under supervision, within the framework of the Part-145 approved procedures for Personnel Authorisation.	
3. OPERATION	
Operating Practices and Procedures (*)	
The applicant must institute EDTO Operating Practices and Procedures. These practices and procedures should cover the following subjects:	<i>1.1.1.a.vii..1 To be completed by applicant</i> EDTO Operating Practices and procedures are described in (add manual reference, chapter and sub-chapter).



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1. Flight planning procedures (EDTO) status of aeroplane, review of technical log, use of minimum equipment list (Mel), external inspection, etc.).	
2. En-route procedures (cross checking procedures to identify navigation errors, selection of other navigation aids in case of loss of RNAV capability, use of INS/IRS navigation systems without automatic radio navigation updating, use of GPS, notification of ATC of navigation equipment problems, contingency procedures, etc.), minimum equipment at the EDTO entry point, alternate routings, position check before entering EDTO airspace, alternate airports, performance data, fuel and oil supply etc.	
2. Fuel and oil policy for EDTO operations.	
4. Procedures with respect to flight crew response to abnormal situations (response to non-normal events, etc.,).	
5. Post-flight procedures (technical log entries, defects description, etc.).	
Flight Crew Training and Qualification (*)	
The applicant is required to establish the following (covering subjects under 3.1. to 3.5).	<i>1.1.1.a.vii..2 To be completed by applicant</i> Description in (add manual reference, chapter and sub-chapter.
6. Flight crew qualification requirements.	
7. Description of initial and recurrent training, checking and training-syllabi	
8. Completed ANNEX 1 to this Application for EDTO (Applicant's EDTO Operations Manual)	

4. APPLICATION PACKAGE

Documentation to be submitted to the Authority	Submitted?	
	Yes	No
1. Compliance statement which shows how the criteria of SLCAIS have been satisfied (*).	<input type="checkbox"/>	<input type="checkbox"/>
2. CMP Document (latest revision) (*)	<input type="checkbox"/>	<input type="checkbox"/>
3-Section of the AFM or AFM supplements that document EDTO airworthiness approval.	<input type="checkbox"/>	<input type="checkbox"/>
4. CMP compliance list showing compliance with the titles and numbers of all modification, additions and changes which were made in order to substantiate the incorporation of the CMP standard in the aeroplane.	<input type="checkbox"/>	<input type="checkbox"/>
5. EDTO Maintenance Manual (*)	<input type="checkbox"/>	<input type="checkbox"/>
6. Supplements and revision to the existing Maintenance Program and Maintenance Procedures Manual(*)	<input type="checkbox"/>	<input type="checkbox"/>
7. Flight crew EDTO training programmes and syllabi for initial and recurrent training (*).	<input type="checkbox"/>	<input type="checkbox"/>
8. Operation manuals and checklists that include EDTO operating practices and procedures (GOM, Airport Analysis, TM, AOM, FCOM, Route Manuals, standalone EDTO manuals, etc.)(*).	<input type="checkbox"/>	<input type="checkbox"/>
9. Minimum Equipment List (MEL) that include items pertinent to EDTO operations (*)	<input type="checkbox"/>	<input type="checkbox"/>

5. APPLICANT'S STATEMENT

The undersigned certifies the above information to be correct and that aeroplane system installation, continuing airworthiness of systems, minimum equipment for dispatch, operating and flight crew training comply with the requirements of Instruction N° 07DSV2015

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Name of Post Holder Continuing Airworthiness:	Signature:	Date:
Name of Post Holder Operations:	Signature:	Date:
Name of Quality Manager Continuing Airworthiness	Signature:	Date:
Name of Quality Manager Operations	Signature:	Date:

(For official use only)

Subject	Responsible	Date	SRS N°	Signature
1. Form CAASL xx Application and item 5 application package checked for completeness.	FOI			
2. Airworthiness Approval granted (Letter of Approval)	DAW			
3. Operational Approval granted (AOC or Letter of Approval)	DOP			
4. EDTO Approval process administratively completed (Ops Specs update, Billing).	Director FS		NA	

EDTO Approved ☐ Yes ☐ No

Withdrawal of EDTO Approval

Reason:

Name:

Date:

Signature



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ANNEX 1 TO APPLICATION FOR EDTO CAASL/AW/A/010

Applicant's EDTO Operations Manual

Please complete your review of your Operations Manual. The EDTO flight operations minimum requirements are given in the table below.

Enter the Operations Manual references in the last column and return the matrix, together with photocopies of the relevant pages of the Operations Manual, to the address given in paragraph 4 of Section II.

OPERATIONS MANUAL	SUBJECTS	REQUIREMENTS	OPERATIONS MANUAL REF. OR DOC. REF.
Part A General	Documents/regulations used in compiling ETOPS Manual/Procedures.	EU-OPS EASA AMC 20-6 FAA AC 120-42B	
	Brief description of EDTO/ETOPS.		
	Definitions.	Extended Operations. Adequate aerodrome. Approved one-engine inoperative cruise speed. Threshold distance/time. Adequate ETOPS En route alternate. Equal time points. Rule distance/time. ETOPS segment. ETOPS significant system. Maximum approved diversion time. Dispatch.	
	Criteria.	Company AOC defined operating area. List of certified aircraft types/engine combinations.	
	Approval.	Approved diversion time.	
	Qualifications.	Crew qualifications. ETOPS qualified dispatcher personnel. ETOPS qualified operations staff. ETOPS qualified maintenance personnel.	
	Training (Initial and Recurrent) and Checking.	Flight crew training and Operations Manuals. Flight crew currency requirements.	
	ETOPS Authorization.	Commander's responsibilities. Statement to show when ETOPS are allowed.	



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Part A General (Contd.)	ETOPS Flight Preparation and Planning.	Aircraft serviceability and MEL. Communication and navigation facilities. Critical fuel scenario. Critical fuel reserve. ETOPS alternate aerodrome selection. ETOPS alternate planning minima. Pre-dispatch and post-dispatch weather minima. Computerised flight plan. Delayed dispatch. Maintenance check (pre-departure service check). Verification flights.	
	Flight Crew Procedures.	Crew responsibilities. Flight documentation/chart handling. Fuel management. Weather monitoring. Change of routing. Diversion decision-making. Icing. Crew workload management.	
Part B Type Specific	Type-related ETOPS Operations.	Identification of EDTO/ETOPS aeroplanes. Types of EDTO/ETOPS operations that are approved. Placards and limitations. One-engine inoperative speed.	
	Type-specific Planning Requirements.		
	ETOPS Fuel Planning.	Including critical fuel scenario.	
	MEL/CDL.	EDTO/ETOPS-specific MEL/CDL items.	
	Aeroplane Systems.	Performance data. Aerodrome technical differences, navigation fit, communications fit.	
	Non-normal Procedures.	Navigation failures. Action to be taken on EDTO/ETOPS-significant system failure. Low fuel scenario. Crew incapacitation.	
	ETOPS Areas and Routes.	Approved area of operation. EDTO/ETOPS En-route alternates.	



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<p>Part C</p> <p>Route and Aerodrome Instructions</p>		<p>Performance restrictions and weather minima for En route alternates.</p> <p>Meteorological facilities/information.</p> <p>Low altitude cruise information.</p> <p>Route minimum diversion altitudes.</p> <p>MSA restrictions.</p> <p>Route-specific oxygen requirements.</p>	
<p>Part D</p> <p>Training</p>	<p>Ground, Simulator and Line Training.</p>	<p>General:</p> <ul style="list-style-type: none"> • EDTO/ETOPS overview. • EDTO/ETOPS regulations. • EDTO/ETOPS type design approval. • Definitions. • Approved one-engine inoperative speed. • Maximum approved diversion time. • Operator's approved diversion time. • EDTO/ETOPS area of operation. • EDTO/ETOPS routes. • EDTO/ETOPS alternate aerodromes and weather minima. • Navigation systems accuracy, limitations and operating procedures. • Meteorological facilities and information. • In-flight monitoring and procedures. • Computerised flight plan. • Charts and position plotting. • Equal time point. • Critical fuel. Normal procedures: • Flight planning and dispatch. • ETOPS fuel requirements. • Route alternate selection - weather minima. • MEL - equipment-specific. • ETOPS service check and technical log. • Pre-flight FMS set-up. • Flight performance progress monitoring. • Flight management, navigation and communication systems. • Aeroplane system monitoring. • Weather monitoring. • In-flight fuel management (to include independent cross-checking of fuel quantity). 	



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PART D TRAINING (Contd.)		<p>Non-normal procedures:</p> <ul style="list-style-type: none"> • Diversion procedures and diversion 'decision making'. • Navigation and communication systems, including appropriate flight management devices in degraded modes. • Fuel management with degraded systems. • Procedures for single and multiple failures in flight affecting EDTO/ETOPS sector entry and diversion decisions. • Operating on standby power. • Operational restrictions associated with system failures including any applicable MEL considerations. 	
	ETOPS Simulator Training and Line Flying Under Supervision.	<p>Pilot's conversion course.</p> <p>Annual refresher course.</p>	
	Flight Operations Staff and Dispatchers.	<p>Outline of training syllabus to include:</p> <ul style="list-style-type: none"> • EDTO/ETOPS regulations. • Operational approval. • Aeroplane performance. • Diversion procedures. • Area of operation. • Fuel requirements. • Dispatch considerations: MEL, CDL, weather minima and alternate airports. • Delayed dispatch. • Documentation. 	
Any Further Comments to Support Your Application:			



Appendix 35-B

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Extended Range Twin Engine Operations (ETOPS/EDTO)

CAA/OP/CL/069

OPERATOR:				DATE:						
LOCATION:				INSPECTOR:						
Type of Approval Process	Conventional			APU Type						
	Accelerated			Engine Type						
Aircraft Type										
Diversion Time Request	75 Min		90 Min		120 Min		150 Min		180 Min	

Instructions for Use:

1. Check “S” column if you reviewed the record, procedure or event and have no comment.
2. Check “U” column if you reviewed the record, procedure or event and have a comment.
3. Check “N” column if you did not review the record, procedure or event or you do have adequate information to make a valid comment
4. Enter the letter "N" in the column, if the line item is not required in this particular situation.
5. Enter any notes on reverse side regarding a “U” answer.

35 For later reference, precede any notes with the appropriate question number.

S=Satisfactory; U=Unsatisfactory; N= Not Observed; NA= Not Applicable

No;	Subject	S	U	N	NA
1.	APPLICATION PROCESS				
	Initial Application Date:				
	Pre-Application Meeting Date:				
	Schedule of Events - Date Received:				
	Projected Start Up Date:				
	Conformity Statement - Date Received:				
	Documents Request Letter to the Operator - Date Sent:				
No;	Subject	S	U	N	NA
2.	COMPANY PROCEDURES MANUALS				
2.1	Revision to the Flight Operations Manual?				



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2.2	ETOPS Operations Manual? (Subject to revision control?)				
2.3	ETOPS Chapter of the Flight Operations Organization & Procedures Manual?				
2.4	Revision to the operational procedures manual for area navigation?				
3.	AIRCRAFT -SPECIFIC CHECKLISTS & MANUALS				
3.1	Revision to the condensed normal operations checklists?				
3.2	Revision to the condensed emergency and abnormal checklist?				
3.3	Details of the aircraft ETOPS systems and limitations?				
3.4	Manufacturers Pilot Operating Handbook with ETOPS references?				
3.5	Manufacturers Flight Crew Operating Manual with ETOPS references?				
3.6	Company Aircraft Operating Manual with ETOPS references?				
3.7	Revision to the Runway analysis manual (or AFM charts and obstacle survey data)?				
3.8	Revision to the Performance and planning manual (or AFM section)?				
3.9	Revision to the MEL?				
3.10	ETOPS Technical Log Procedures?				
4.	FLIGHT CREW TRAINING AND QUALIFICATION ANALYSIS				
4.1	Ground school				
	ETOPS awareness				
	Flight preparation				
	Performance Data				
	Decision making				
	Diversion				
	Procedures				
	Crewmember incapacitation				
	ETOPS regulations Fuel				
	Management Abnormal/Emergency procedures				
4.2	Simulator training program & syllabi				
	Manoeuvres				
	LOFT authority				
4.3	Aircraft "Line" flight training program				
	As observer				
	As crewmember				
4.4	Training Location:				
4.5	Contract Training				
	Instructor Resumes				
	Instructor Approvals				
	Contractor:				
4.6	Flight operations experience				
	Direct (same Make/Model)				
	Related (simulated ETOPS, area of operations, ETOPS other makes/models)				
4.7	List of personnel qualification & training currency				
5.	FLIGHT PLANNING ANALYSIS				
5.1	Operational Flight Plan				
	Manually generated				
	Computer generated				
	Appropriate routing				
	Weather acquisition system				
	Fuel planning system				
	Contingency information				
No;	Subject	S	U	N	NA No;
5.2	Routes.				
				
				
				



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5.3	Suitable En-route Alternate Airports				
	Fire protection				
	Lodging				
	PAX handling				
	Fuel and oil servicing				
	Approach facilities				
	AIP lighting				
	AIP lighting				
	Maintenance facilities				
	Stable w/x conditions				
	Medical facilities				
	Listing				
				
				
				
				
5.4	Alternate weather validity period (1 hr. before earliest ETA until 1 hr. after latest ETA)				
5.5	Dispatch alternate weather minima				
	1 runway: DH/MDA +400feet & Vis. +1500mtrs				
	2 runways (with approach facilities): DH/MDA +200 feet & Visibility +800 meters				
5.6	ETOPS Fuel burn performance tables or graphs available?				
5.7	Fuel planning (FL 100, one engine out, ice accumulation)?				
5.8	Critical Fuel Scenario Description?				
5.9	Navigation Log completed in accordance with specifications?				
5.10	Alternate airports identified in flight planning?				
6.	LONG RANGE ROUTE REQUIREMENTS				
6.1	Survival Equipment and its use?				
6.2					
	VHF				
	HF				
6.3	Navigation				
	GPS				
	INS				
	IRS				
	RSVM				
	Other				
6.4	Passenger and crew Oxygen (time & distance)?				
6.5	Time related cargo fire limitations? (unacceptable for ETOPS)				
7.	NAVIGATION INFORMATION INCLUDING ETOPS ALTERNATES				
7.1	Flight plan and diversion route guide readily available?				
7.2	Aeronautical information publication readily available?				
7.3	IFR departure navigation charts for each required pilot?				
7.4	IFR approach navigation charts for each required pilot?				
7.5	IFR enroute navigation charts for each required pilot?				
No;	Subject	S	U	N	NA
8.	CONTINUING SURVEILLANCE & REPORTING SYSTEM				
8.1	Any significant service event in the ETOPS fleet				
8.2	Corrective actions for short & long term				
8.3	Statistical reliability indicators for essential systems & engines				



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9.	MAINTENANCE LOG				
9.1	Appropriate maintenance release?				
9.2	ETOPS Service Check?				
9.3	Verification Flight?				
9.4	Conformance with MEL dispatch procedures?				
10.	ETOPS SIGNIFICANT SYTEMS				
10.1	Electrical (including battery				
10.2	Hydraulic				
10.3	Pneumatic				
10.4	Fuel				
10.5	Ice Protection				
10.6	Air Conditioning & Pressurization				
10.7	Fire Protection				
10.8	Auxiliary Power Unit				
10.9	Engine Fuel & Control System				
10.10	Engine Air System				
10.11	Engine Start & Ignition				
10.12	Engine Oil				
10.13	Any other system necessary for ETOPS				
11	COMPANY MAINTENANCE MANUALS				
11.1	ETOPS Revised Maintenance Control Manual?				
11.2	ETOPS Revised Aircraft-specific Manufacturers Maintenance Manuals				
11.3	ETOPS supplemented Aircraft flight-away kit included?				



Appendix 35 – C

CIVIL AVIATION AUTHORITY OF SRI LANKA Joint Operations and Airworthiness EDTO Evaluation Checklist

Date		Base of operation	
Ops Inspector		Org. Identifier	
AWI Inspector		Operator	
Location		File Ref #	
Mgmt. Rep		Time	

COMPLETION INSTRUCTIONS

The completion instructions for those job aids that are constructed with the following header are—

YES	NO	NS	N/A	GENERAL
-----	----	----	-----	---------

- 1) Check YES column if you reviewed the record, procedure or event and have no comment.
- 2) Check NO column if you reviewed the record, procedure or event and have a comment.
- 3) Check NS (not seen) column if you did not review the record, procedure or event or you do not have adequate information to make a valid comment
- 4) Check NA (not applicable) column, if the line item is not required in this particular situation.
- 5) Make notes regarding a NO answer for resolution.
- 6) For later reference, precede any notes with the appropriate question number

THIS ACTIVITY IS COORDINATED BETWEEN THE AWI AND FOI

1.0	REQUIREMENTS	YES	NO	NS	N/A	REMARKS
1.1	Has the AWI successfully completed EDTO evaluation?					
1.2	Is the EDTO manual satisfactory?					
1.3	Does the Flight Operations Manual condensed and expanded checklist contain EDTO procedures?					
1.4	Does the MEL contain unambiguous EDTO dispatch requirements and provisos?					
1.5	Does the AOM contain EDTO procedures and systems operations?					
1.6	Are the Route Guides adequate for EDTO operations?					
1.7	Do charts clearly define areas of EDTO operations?					
2.0	ARE FLIGHT OPERATIONS OFFICERS TRAINED AND COMPETENT IN;	YES	NO	NS	N/A	REMARKS



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2.1	EDTO flight planning?					
2.2	Assessment of destination and diversion minimum weather and aerodrome conditions for EDTO?					
2.3	EDTO MEL procedures					
2.4	Does flight crew training and checking include EDTO Syllabus, checking, and line experience?					
3.0	ASSESSMENT					
3.1	Verify compliance with aircraft type data document through coordination with the aircraft manufacturer as necessary					
3.2	Are the following included in the operator's manual or EDTO manual or CAME					
3.3	Reference to maintenance programme, oil consumption programme and engine					
4.0	VERIFICATION PROGRAMME, WHICH					
4.1	List of primary systems?					
4.2	Conditions that require verification flights?					
4.3	Procedures for initiating verification flights?					
4.4	Procedures for monitoring and evaluation corrective actions?					
4.5	Procedures that identify adverse trends?					
4.6	Procedures that verify implementation of corrective actions?					
5.0	ENGINE CONDITION MONITORING PROGRAMME, WHICH INCLUDES					
5.1	Scope of programme?					
5.2	Notification procedures for deterioration?					
5.3	Deterioration monitoring limits for internal engine parts?					
6.0	RELIABILITY PROGRAMME, WHICH					
6.1	Reporting criteria?					
6.2	Procedures to ensure reporting of significant individual event?					
7.0	ENGINE/APU OIL CONSUMPTION MONITORING PROGRAMME, WHICH					
7.1	Established limits of consumption?					
7.2	Procedures for verification prior to start of each extended range leg?					
8.0	EXTENDED RANGE PARTS CONTROL, WHICH					
8.1	Methods of verification of proper parts?					
8.2	Control procedures during parts pooling and borrowing?					
9.0	MAINTENANCE TRAINING PROGRAMME, TO					
9.1	Personnel are aware that an EDTO authorization is in place?					
9.2	Personnel including contract personnel are adequately trained on the specific programme required for EDTO authorization?					
10.0	SURVEILLANCE PROGRAMME, WHICH	YES	NO	NS	N/A	REMARKS
10.1	Frequency of audits?					
10.2	Reports generated by audits?					



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Chapter 36 - DANGEROUS GOODS

36.1 GENERAL POLICY

- 36.1.1 CAASL Dangerous Goods Coordinator will be the CPC for any certification to authorize transportation of dangerous goods by air.
- 36.1.2 The assigned inspector will consult with the DGC prior to completion of all other certification processes to ensure that the potential for transportation of unauthorized dangerous goods has been addressed in manuals and training programs.
- 36.1.3 All AOC holders are required to provide training to their personnel on the identification of dangerous goods.
- 36.1.4 Those operators who transport dangerous goods must include procedures for handling these materials in their operations manual.
- 36.1.5 These operators must also train their personnel in the use of these procedures.

36.2 ICAO TECHNICAL INSTRUCTIONS

36.2.1 TECHNICAL INSTRUCTIONS ARE CONTROLLING

- 36.2.2 The ICAO Technical Instructions amplify the basic provisions of Annex 18 to the Convention on International Civil Aviation, and contain detailed instructions necessary for the safe international transport of dangerous goods by air. These instructions are issued in a 2-year edition on alternate Septembers, becoming effective the following January 1.

- 36.2.2.1 ANR 129 mandates that the ICAO Technical Instructions will be applied without deviation by the operators authorised to transport dangerous goods.

36.2.3 POSSIBLE EXEMPTIONS

- 36.2.4 It is unlikely that an exemption will be issued, but operators considering an exemption should be advised to follow the procedures outlined in regulations.
- 36.2.5 Any applications for exemption will be processed by the CAASL-FS Dangerous Goods Coordinator. The role of other CAASL-FS inspectors will be limited to providing technical input to the DGC.
- 36.2.6 There are two types of possible exemptions—
- An exemption which is valid for 2 years and is obtained through the standard exemption process and
 - An emergency exemption that is issued to the shipper who hires and provides the name of the operator in the exemption. The emergency exemption is normally issued exclusively for one-time-only shipments.



36.3 CAASL-FS ORGANISATION RELATIONSHIPS

36.3.1 CAASL-FS has a Dangerous Goods Expert (DGE) on the FS Director's staff. The DGE has oversight responsibility for an operator's dangerous goods programme.

36.3.2 The DGC is the technical expert and must evaluate all dangerous goods programmes.

- a. An operator's dangerous goods programme is contained in its Dangerous Good manual; which includes the approved dangerous goods training programme for its personnel.

36.3.2 The DGC is responsible for the development and implementation of the annual MRAI requirements for inspections of operators authorised to transport dangerous goods by air.

36.3.3 COORDINATION

- a. The FOI may be required to act as a coordinator between the operator and DGC for technical issues.
- b. The DGC should be contacted regarding all aspects of the transportation of dangerous goods by air.

36.3.4 VIOLATIONS & INVESTIGATIONS

- a. When any inspector becomes aware of a suspected dangerous goods violation, that inspector shall notify the appropriate DGC and the appropriate FOI. It will be the responsibility of the DGC to determine the extent and participants in the subsequent investigation.
- b. Aviation safety inspectors with qualification regarding dangerous goods may be assigned to conduct inspections, surveillance, and investigations of the transportation of dangerous goods in commercial air transport operations.

36.3.5 EXEMPTIONS

- a. When an operator applies for either an initial CAASL-FS exemption or the renewal of an exemption for the transportation of certain dangerous good in by air, the FOI and the principal maintenance inspector (PMI) may be assigned to assist the DGC in reviewing the compliance history of the certificated operator.

36.4 PROCEDURES FOR APPROVAL

36.4.1 APPROVAL OF DANGEROUS GOODS MANUALS

- a. Like other manuals, the dangerous goods manual is required by regulations and must be accepted by the FOI.
- b. However, FOIs must not accept this manual until the DGC has evaluated it and recommended it for acceptance.

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- c. When a FOI receives a dangerous goods manual for review from an operator—,
- d. The FOI should forward it to the DGC.
- e. The DGC will review the contents of the manual and consult with the FOI when necessary.
- f. The operator should coordinate directly with the DGC as necessary to formulate a satisfactory dangerous goods manual.
- g. Once the DGC is satisfied with the manual, he will recommend it to the FOI in writing for acceptance.
- h. After receiving the DGC written recommendation, the FOI accept the manual and issue the necessary operations specification revision approving the operator for transportation of dangerous goods by air.

36.4.2 APPROVAL FOR DANGEROUS GOODS TRAINING

- a. When a DD OPS receives proposed or updated dangerous goods training from an operator, that DD Ops should forward it to the GOI.
- a. The GOI evaluates the contents of the training and consults with the FOI when necessary.
- b. The operator should be advised to coordinate directly with the GOI as necessary to formulate satisfactory dangerous goods training.
- b. Once the GOI is satisfied with the training, he/she will recommend it to the DD Ops in writing for final approval.
- a. The DD Ops then approves the implementation of the training in accordance with IS 009 and SLCAP 4410 requirements.
 - Dangerous goods training is usually included in the operator's dangerous goods manual.
- b. The initial approval of the training is usually done at the same time as the review and acceptance of the dangerous goods manual

36.5 OPERATORS WHO DO NOT TRANSPORT DANGEROUS GOODS

36.5.1 Operators who do not accept, handle, or store dangerous goods must provide procedures and instructions in the operator's manual as follows—

- a. Procedures and instructions so that all personnel responsible for accepting and handling any cargo or packaged materials receive adequate training on the recognition of items classified as dangerous goods;



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- b. Procedures and instructions to ensure that no packages are accepted by the operator containing a dangerous good;
- c. Procedures and instructions for reporting that damaged packages found to contain, or that are suspected of containing, dangerous goods or dangerous goods are reported in compliance with IS 009 and SLCAP 4410.
- d. Procedures and instructions to see that all company material (COMAT) containing dangerous goods will be offered to a different mode of transportation (e.g., ground) and/or an operator that is authorised to transport dangerous goods; and
- e. Procedures and instructions to see that any employee, agent, or contract employee of the operator who prepares and/or offers COMAT containing dangerous goods for shipment via any mode is fully trained as a dangerous goods shipper.

36.6 OPERATORS WHO ACCEPT DANGEROUS GOODS FOR TRANSPORT

- 36.6.1 Operators who transport dangerous goods must provide instruction and procedures on the basic subjects outlined in IS 009 and SLCAP 4410.
- 36.6.2 The information is provided in this section as background material for the aviation safety inspector (ASI). It is not intended to supplant the DGC's guidance, nor to be used to provide guidance for an operator's dangerous goods programme.
- 36.6.3 FOIs may share this information when requested, but must see that the operator understands that the DGC is the CAASL-FS point of contact for approval of documentation that the operator must work with when developing, implementing or changing a dangerous goods programme.
- 36.6.4 Operators should be advised to use the latest version of Advisory Circular (AC) 18-001, Guidance for Transportation of Dangerous Goods by Air, when they develop their dangerous goods programmes.

36.6.5 PROCEDURES AND INSTRUCTIONS ON ACCEPTANCE OF DANGEROUS GOODS

36.5.1.1 The operator's instructions should contain the following information—

a. Packaging

- The material must be properly packaged in accordance with the packaging rules and it must be properly marked, labelled, and documented.
- The total quantity must be within the quantity limitations and the shipment must be accompanied by the proper shipping papers, CAASL-FS, or competent authority certificates, as determined by the inspection requirements for accepting shipments.

b. Damage-Free

- The package may not leak or be damaged, and must be an authorised package in accordance with the applicable regulations and Technical Instructions.

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c. **Authorisation of Transport**

- The package must either be authorised for transport in passenger-carrying aircraft or, if it is not acceptable for such aircraft, clearly labelled for cargo-only aircraft

d. **Identification**

- The material must be identified by the proper shipping name, hazard class or division, identification number, and packing group, when required, in accordance with ICAO Technical Instructions.

e. **Marking and Labelling.**

- The package must be properly marked and labelled in accordance with the ICAO Technical Instructions.

f. **Shipping Papers**

- Shipping papers must be reviewed to ensure that all necessary information is entered, including any additional information that may be required because of the commodity shipped, or because the method of transportation is related to air transportation.

36.6.6 STORAGE OF DANGEROUS GOODS

36.6.6.1 Operators should provide specific guidance on the storage of dangerous goods.

36.6.6.2 This guidance should include instructions for Class 8 (corrosive), Class 7 (radioactive), and Class 6, Division 6.1 (poisonous) materials as discussed below—

a. **Corrosive Materials (Class 8)**

- The storage of Class 8 (corrosive) materials next to, or in contact with, Class 4, Division 4.2 or (flammable) solids or Class 5, Division 5.1 (oxidizing) materials must be prevented.
- The segregation prescribed the Technical Instructions must be maintained for all packages containing dangerous goods that might react dangerously when stored in a position that causes or contributes to leakage.

b. **Radioactive Materials (Class 7)**

- The storage of Class 7 (radioactive) materials labelled yellow II and/or yellow III will not exceed a transport index (TI) of 50 in a single storage location.
- These materials are stored in an area that is isolated from people and does not permit pedestrian traffic or loitering.



- The minimum separation distances prescribed in the Technical Instructions should be maintained between radioactive materials labelled yellow II and yellow III and packages of undeveloped film.

c. Poisonous Materials (Class 6, Division 6.1)

- Packages bearing a Class 6, Division 6.1 poison label will not be stored in the same location as foodstuffs, feeds, or any edible materials intended for consumption by either humans or animals.

36.6.7 LOADING OF DANGEROUS GOODS

36.6.7.1 The operator should provide specific guidance for loading dangerous goods.

36.6.7.2 This guidance should include—

- a. Loading of dangerous goods in aircraft in accordance with regulations.
- b. Loading and carriage of dangerous goods in cargo-only aircraft, when other means of
- c. transportation are not available or impracticable, in accordance with the Technical Instructions
- d. Loading of radioactive materials in aircraft to ensure that TI limitations are in accordance with the provisions of the Technical Instructions and that radioactive packages are transported.
- e. Loading of dangerous goods in cargo compartments or freight containers within cargo compartments, in accordance with Regulatory and the Technical Instructions
- f. A prohibition against loading packages bearing a poison label in the same compartment that holds foodstuffs, feeds, or any edible materials intended for consumption by humans or animals unless both commodities are in separate, closed-unit load devices known as freight containers. Written Notification of Pilot-In-Command (PIC)

36.6.7.3 Operators must establish procedures for notifying the PIC when dangerous goods are carried on board the aircraft.

36.6.8 REPORTING DANGEROUS GOODS INCIDENTS

36.6.8.1 The dangerous goods information must include company procedures for reporting dangerous goods incidents and should include the procedures for reporting discrepancies with the loading or the shipper's papers.

36.6.9 DAMAGE TO DANGEROUS GOODS PACKAGES.

36.6.9.1 The operator must develop procedures for handling damaged packages, radioactive contamination, and substances in Class 6, Division 6.2 (infectious substances),

36.6.9.2 The information should include a list of telephone numbers and addresses of organizations that can provide technical advice on clean-up techniques and precautions to minimize the possibility of injury to employees and the general public.

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Note: Please refer Dangerous Goods Inspector Manual SLCAP Doc 4410 for Inspector guidance and Checklists.

Reference: Implementing Standard 009

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Chapter 37 - INCIDENT REPORTING SYSTEMS

37.1 INCIDENT REPORTING SYSTEMS

37.1.1 INTRODUCTION TO REPORTING SYSTEMS

37.1.1.1 A great deal is learned about safety deficiencies from accident investigations. Fortunately, aviation accidents are rare events. They are, however, generally investigated more thoroughly than incidents. When safety initiatives rely exclusively on accident data, the limitations of small samples apply. As a result, the wrong conclusions may be drawn or inappropriate corrective actions taken.

37.1.1.2 Research leading to the 1:600 Rule showed that the number of incidents is significantly greater than the number of accidents for comparable types of occurrences. The causal and contributory factors associated with incidents may also culminate in accidents. Often, only good fortune prevents an incident from becoming an accident. Unfortunately, these incidents are not always known to those responsible for reducing or eliminating the associated risks. This may be due to the unavailability of reporting systems, or people not being sufficiently motivated to report incidents.

37.1.2 VALUE OF REPORTING SYSTEMS

37.1.2.1 Recognizing that knowledge derived from incidents could provide significant insights into safety hazards, several types of incident reporting systems have been developed. Depending on the type of reporting programme, a rich source of data for safety analysis may be available. Some safety databases contain a large quantity of detailed information³¹. Although these occurrences may not be investigated to any depth, the anecdotal information they provide can offer meaningful insight into the perceptions and reactions of pilots, cabin crew members, mechanics and air traffic controllers.

37.1.2.2 Safety reporting systems should not just be restricted to incidents, but should include provision for the reporting of hazards, i.e. unsafe conditions which have not yet caused an incident. For example, some organizations have programmes for reporting conditions deemed unsatisfactory from the perspective of experienced personnel (Unsatisfactory Condition Reports). In some States, Service Difficulty Reporting (SDR) systems are effective in identifying airworthiness hazards. Aggregating data from such hazard and incident reports provides a rich source of experience to support risk management programmes.

37.1.2.3 Data from incident reporting systems can facilitate an understanding of the causes of hazards, help define intervention strategies, and the effectiveness of interventions.

Depending on the depth to which they are investigated, incidents can provide a unique means of obtaining first hand evidence on the factors associated with mishaps from the participants themselves. Reporters can describe the relationships between stimuli and their actions. They may provide their interpretation of the effects of various factors affecting their performance, such as fatigue, interpersonal interactions and distractions. Furthermore, many reporters are able to offer valuable suggestions for remedial action. Incident data have also been used to improve operating procedures, display and control design, and provide a better understanding of human performance associated with the operation of aircraft and air traffic control.

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37.1.3 ICAO REQUIREMENTS

37.1.3.1 ICAO requires that States establish a mandatory incident reporting system to facilitate collection of information on actual or potential safety deficiencies. In addition, States are encouraged to establish a voluntary incident reporting programme, adjusting their laws, regulations and policies so that the voluntary programme—

- a. Facilitates the collection of information that may not be captured by a mandatory incident reporting system;
- b. Is non-punitive; and
- c. Affords protection to the sources of the information.

37.2 TYPES OF INCIDENT REPORTING SYSTEMS

37.2.1 In general, an incident involves an unsafe, or potentially unsafe, occurrence or condition that does not involve serious personal injury or significant property damage; that is, it does not meet the criteria for an accident, but could have.

37.2.2 When an incident occurs, the individual(s) involved may or may not be required to submit a report. The reporting requirements carry with the laws of the State where the incident occurred. Even if not required by law, operators may require reporting of the occurrence to the company.

37.2.3 MANDATORY INCIDENT REPORTING SYSTEM

- a. A company should establish a mandatory incident reporting system to facilitate the collection of information on actual or potential safety deficiencies, including all regulatory requirements.
- b. In a mandatory system, people are required to report certain types of incidents. This necessitates detailed regulations outlining who shall report and what shall be reported. The number of variables in aircraft operations is so great that it is difficult to provide a comprehensive list of items or conditions which should be reported.
 - a. For example, loss of a single hydraulic system on an aircraft with only one such system is critical. On a type with three or four systems, it may not be.
 - d. A relatively minor problem in one set of circumstances can, in different circumstances, result in a hazardous situation.
 - c. However, the rule should be: ***If in doubt — report it.***
- c. Because mandatory systems deal mainly with “hardware” matters, they tend to collect more information on technical failures than on the Human Factor aspects. To help overcome this problem, States with well-developed mandatory reporting systems are introducing voluntary incident reporting systems aimed specifically at acquiring more information on the human factor aspects of occurrences.



37.2.4 VOLUNTARY INCIDENT REPORTING SYSTEMS

- a. Voluntary incident reporting systems to supplement the information obtained from mandatory reporting systems. In such systems, the reporter, without any legal or administrative requirement to do so, submits a voluntary incident report. In a voluntary reporting system, regulatory agencies may offer an incentive to report.
 - a. For example, enforcement action may be waived for unintentional violations that are reported.
 - b. The reported information should not be used against the reporters, i.e. such systems must be non-punitive to encourage the reporting of such information.

37.2.5 CONFIDENTIAL REPORTING SYSTEMS

- a. Confidential reporting systems aim to protect the identity of the reporter. This is one way of ensuring that voluntary reporting systems are non-punitive.
- b. Confidentiality is usually achieved by de-identification, often by not recording any identifying information of the occurrence. One such system returns to the user the identifying part of the reporting form and no record is kept of these details.
- c. Confidential incident reporting programmes facilitate the disclosure of human errors, enabling others to learn from mistakes made, without fear of retribution or embarrassment.

37.3 PRINCIPLES FOR EFFECTIVE INCIDENT REPORTING SYSTEMS

37.3.1 People are understandably reluctant to report their mistakes to the company that employs them, or to the government department that regulates them. Too often following an occurrence, investigators learn that many people were aware of the unsafe conditions before the event. For whatever reasons, however, they did not report the perceived hazards, perhaps because of—

- a. Embarrassment in front of their peers;
- b. Self-incrimination, especially if they were responsible for creating the unsafe condition;
- c. Retaliation from their employer for having spoken out; or
- d. Sanction (such as enforcement action) by the regulatory authority.

37.4 Use of the following principles help overcome the natural resistance to safety reporting.

37.3.3 TRUST

37.3.3.1 Persons reporting incidents must trust that the receiving organisation (whether the State or company) will not use the information against them in any way. Without such confidence, people will be reluctant to report their mistakes and they may also be reluctant to report other hazards they are aware of.

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37.3.3.2 Trust begins with the design and implementation of the programme. Employee input into the development of a reporting system is vital. A positive safety culture in the organisation generates the kind of trust necessary for a successful incident reporting system. Specifically, the culture must be error tolerant and non-punitive. In addition, incident reporting systems need to be perceived as being fair in how they treat unintentional errors or mistakes. (Most people do not expect an incident reporting system to exempt criminal acts, or deliberate violations, from prosecution or disciplinary action.) Some States consider such a process to be an example of a “Just Culture”.

37.3.4 NON-PUNITIVE

37.3.4.1 Non-punitive reporting systems are based on confidentiality. Before employees will freely report incidents, they must receive a commitment from the regulatory authority or from top management that reported information would not be used punitively against them. The person reporting the incident (or unsafe condition) must be confident that anything said will be kept in confidence. In some States, “Access to Information” laws make it increasingly difficult to guarantee confidentiality. Where this happens, reported information will tend to be reduced to the minimum to meet mandatory reporting requirements.

37.3.4.2 Sometimes reference is made to anonymous reporting systems. Reporting anonymously is not the same as confidential reporting. Most successful reporting programmes have some type of call-back capability in order to confirm details, or obtain a better understanding of the occurrence. Reporting anonymously makes it impossible to ensure understanding and completeness of the information provided by the reporter. There is also a danger that anonymous reporting may be used for purposes other than safety.

37.3.5 INCLUSIVE REPORTING BASE

37.3.5.1 Early voluntary incident reporting programmes were targeted at flight crews. Pilots are in a position to observe a broad spectrum of the aviation system, and are therefore well situated to comment on the system’s health. Nonetheless, incident reporting systems which focus solely on the flight crew’s perspective, tend to reinforce the idea that everything comes down to pilot error. Taking a systemic approach to accident prevention requires that safety information be obtained from all parts of the operation.

37.3.5.2 In State-run incident reporting systems, collecting information on the same occurrence from different perspectives facilitates forming a more complete impression of events. For example, ATC instructs an aircraft to ‘go around’ because there is a maintenance vehicle on the runway without authorization. Undoubtedly, the pilot, the controller and the vehicle operator would all have seen the situation from different perspectives. Relying on one perspective only may not provide a complete understanding of the event.

37.3.6 INDEPENDENCE

37.3.6.1 Ideally, State-run voluntary incident reporting systems are operated by an organization separate from the aviation administration responsible for the enforcement of aviation regulations.

37.3.6.2 Experience in several States has shown that voluntary reporting benefits from a trusted “A third party” managing the system.

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37.3.6.3 The third party receives, processes and analyses the incident reports and feeds the results back to the aviation administration and the aviation community. With mandatory reporting systems, it may not be possible to employ a third party.

37.3.6.4 Nevertheless, it is desirable that the aviation administration gives a clear undertaking that any information received will be used for accident prevention purposes only. The same principle applies to an airline or any other aviation operator that uses incident reporting as part of its accident prevention programme.

37.3.7 EASE OF REPORTING

37.3.7.1 The task of submitting incident reports should be as easy as possible for the reporter. Reporting forms should be readily available so that anyone wishing to file a report can do so easily.

37.3.7.2 They should be simple to compile, with adequate space for a descriptive narrative and they should encourage suggestions on how to improve the situation or prevent a reoccurrence.

37.3.8 ACKNOWLEDGMENT

37.3.8.1 The reporting of incidents requires time and effort by the reporter and should be appropriately acknowledged. To encourage further reports, the operator includes a blank report form with the acknowledgment letter. In addition, the reporter naturally expects feedback about actions taken in response to the reported safety concern.

37.3.8.2 To simplify completion, classifying information, such as the type of operation, light conditions, type of flight plan, weather, etc. can use a tick off' format.

37.3.9 PROMOTION

37.3.9.1 The (de-identified) information received from an incident reporting system should be made available to the aviation community in a timely manner. This may also help to motivate people to report further incidents.

37.3.9.2 Such promotion activities may take the form of monthly newsletters or periodic summaries. Ideally a variety of methods would be used with a view to achieving maximum exposure.



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Chapter 38 - SAFETY MANAGEMENT SYSTEMS

38.1 SAFETY MANAGEMENT SYSTEMS

38.1.1 Effective safety management systems comprise three defining cornerstones. The characteristics for each are—

38.1.1.1 CORPORATE APPROACH

A comprehensive corporate approach to safety which provides for such things as—

- Ultimate accountability for corporate safety is assigned to the Board of Directors and Chief Executive Officer (CEO) with evidence of corporate commitment to safety from the highest organizational levels;
- A clearly enunciated safety philosophy, with supporting corporate policies, including a non-punitive policy for disciplinary matters;
- Corporate safety goals, with a management plan for meeting these goals;
- Well defined roles and responsibilities with specific accountabilities for safety published and available to all personnel involved in safety;
- A requirement for an independent safety officer (or Accident Prevention Adviser);
- Demonstrable evidence of a positive safety culture throughout the organization;
- Commitment to a safety oversight process which is independent of line management;
- A system of documentation of those business policies, principles, procedures and practices with safety implications;
- Regular review of safety improvement plans; and
- Formal safety review processes.

38.1.1.2 ORGANISATIONAL TOOLS

Effective organizational tools for delivering on safety standards through such activities as—

- Risk-based resource allocation;
- Effective selection, recruitment, development and training of personnel;
- Implementation of Standard Operating Procedures (SOPs) developed in cooperation with affected personnel;
- Corporate definition of specific competencies (and safety training requirements) for all personnel with duties relating to safety performance;
- Defined standards for, and auditing of, asset purchases and contracted services;
- Controls for the early detection of - and action on - any deterioration in the performance of safety significant equipment, systems or services;
- Controls for monitoring and recording the overall safety standards of the organization;
- The application of appropriate hazard identification, risk assessment and effective management of resources to control identified risks;
- Provision for the management of major changes in such areas as the introduction of new equipment, procedures or types of operation, turnover of key personnel, mass layoffs or rapid expansion, mergers and acquisitions;
- Arrangements enabling staff to communicate significant safety concerns to the appropriate level of management for resolution and feedback on actions taken;

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- Emergency response planning and simulated exercises to test the plan's effectiveness; and
- Assessment of commercial policies with regard to their impact on safety.

38.1.1.3 **INTERNAL FORMAL SYSTEM FOR SAFETY OVERSIGHT**

A formal system for safety oversight with such desirable elements as—

- A system for analysing flight recorder data for the purpose of monitoring flight operations and for detecting unreported safety events;
- An organization-wide system for the capture of reports on safety events or unsafe conditions;
- A planned and comprehensive safety audit review system which has the flexibility to focus on specific safety concerns as they arise;
- A system for the conduct of internal safety investigations, the implementation of remedial actions and the dissemination of such information to all affected personnel;
- Systems for the effective use of safety data for performance analysis and for monitoring organizational change as part of the risk management process;
- Systematic review and assimilation of best safety practices from other operations;
- Periodic review of the continued effectiveness of the safety management system by an independent body;
- Line managers monitoring of work in progress in all safety critical activities to confirm compliance with all regulatory requirements, company standards and procedures, with particular attention to local practices;
- A comprehensive system for documenting all applicable aviation regulations, corporate policies, safety goals, standards, SOPs, safety reports of all kinds, etc. and for making such documentation readily available for all affected personnel; and
- Arrangements for ongoing safety promotion based on measured internal safety performance.

38.2 **MANAGEMENT'S SPECIAL RESPONSIBILITY FOR SAFETY**

38.2.1 The management teams of operators and service providers bear a special responsibility for safety management. In a major study of airlines around the world, it was found that the safest airlines had a clear safety mission, starting at the top of the organization and guiding actions right down to the operational level. Lautman and Gallimore found that in the safest airlines:

38.2.2 Flight operations and training managers recognize their responsibility to flight safety and are dedicated to creating and enforcing safety-oriented policies. ... There is a method of getting information to the flight crews expeditiously and a policy that encourages confidential feedback from pilots to management. ... The management attitude ... is a dynamic force that sets the stage for the standardization and discipline in the cockpit brought about by a training programme oriented to safety issues."

38.2.3 The safest organizations are often the most efficient. Although trade-offs between safety management and costs may occur, management needs to recognize the hidden costs of accidents and that safety is good for business. By taking a systematic approach to corporate decision-making and risk management, accidental losses are reduced.



- 38.2.4 Management has the authority and the responsibility to manage safety risks in the company. This is achieved by establishing a systematic method for identifying hazards, assessing risks, assigning priorities to these risks and then by reducing or eliminating those hazards which pose the greatest potential loss. Management alone has the ability to introduce changes in the organization's structure, staffing, equipment, policies and procedures.
- 38.2.5 Above all, management sets the organizational climate for safety. Without its wholehearted commitment to safety, safety management will be largely ineffective. By positively reinforcing safety actions, management sends the message to all staff that it really cares about safety and that they should too.
- 38.2.6 Management needs to establish safety as a core value of the organization. It can accomplish this by setting objectives and safety goals, then holding managers and employees accountable for achieving those goals. Staff look to management for—
- 38.2.6.1 **Clear direction** in the form of credible policies, objectives, goals, standards, etc.;
- 38.2.6.2 **Adequate resources**, including sufficient time, to fulfil assigned tasks safely and efficiently; and
- 38.2.6.3 **Expertise** in terms of access to experience through safety literature, training, seminars, etc.
- 38.2.7 This onus on management applies regardless of the size or type of organization providing the aviation service. The role of management in managing safety is a recurring theme of Safety Management Systems.

38.3 RESPONSIBILITIES & ACCOUNTABILITIES

- 38.3.1 Responsibility and accountability are closely related concepts. While individual staff members are responsible for their actions, they are also accountable to their supervisor or manager for the safe performance of their functions and may be called on to justify their actions. Although individuals must be accountable for their own actions, managers and supervisors are accountable for the overall performance of the group that reports to them. Accountability is a two-way street. Managers are also accountable for ensuring that their subordinates have the resources, training, experience, etc. needed for the safe completion of their assigned duties.
- 38.3.2 A formal statement of responsibilities and accountabilities is advisable, even in small organizations. This statement clarifies the formal and informal reporting lines on the organizational chart and specifies accountabilities for particular activities with no overlap or omission. The contents of the statement will vary depending on organizational size, complexity and relationships.
- 38.3.3 **SAFETY IS A CONDITION**
- 38.3.3.1 Safety is a condition in which the risk of harm or damage is limited to an acceptable level. The safety hazards creating risk may become evident after an obvious breach of safety, such as an accident or incident, or they may be pro-actively identified through formal safety management programmes before an actual safety event occurs. Having identified a safety hazard, the associated risks must be assessed. With a clear understanding of the nature of the



risks, a determination can be made as to the “acceptability” of the risks. Those found to be unacceptable must be acted upon.

- 38.3.3.2 Safety management is centred on such a systematic approach to hazard identification and risk management — in the interests of minimizing the loss of human life, property damage, and financial, environmental and societal losses.

38.3.4 CONCEPT OF RISK

- 38.3.4.1 Since safety is defined in terms of risk, any consideration of safety must therefore involve the concept of risk.

- 38.3.4.2 There is no such thing as absolute safety. Before any assessment can be made as to whether or not a system is safe, it is first necessary to determine what the acceptable level of risk is for the system.

- 38.3.4.3 Risks are often expressed as probabilities; however, the concept of risk involves more than probabilities.

- a. To illustrate this with a hypothetical example, let us assume that the probability of the supporting cable of a 100-passenger cable car failing and allowing the cable car to fall was assessed as being the same as the probability of a 12-passenger elevator failing and allowing the elevator to fall.
- b. While the probabilities of the events occurring may be the same, the potential consequences of the cable car accident are much more severe. Risk is therefore two-dimensional.

- 38.3.4.4 Evaluation of the acceptability of a given risk associated with a particular hazard must always take into account both the **likelihood** of occurrence of the hazard and the **severity** of its potential consequences.

- 38.3.4.5 The perceptions of risk can be derived from the following three broad categories—

- a. Risks that are so high that they are unacceptable;
- b. Risks that are so low that they are acceptable; and
- c. Risks in between the two categories in 1) and 2), where consideration needs to be given to the various trade-offs between risks and benefits.

- 38.3.4.6 If the risk does not meet the predetermined acceptability criteria, an attempt must always be made to reduce it to a level that is acceptable, using appropriate mitigation procedures. If the risk cannot be reduced to or below the acceptable level, it may be regarded as tolerable if:

38.4 SAFETY CYCLE

- 38.4.1 Given the number and potential relationships of the factors that may affect safety, an effective SMS is required.

- 38.4.2 Hazard identification is the critical first step in managing safety. Evidence of hazards is required and may be obtained in a number of ways from a variety of sources, for example—

- a. Hazard and incident reporting systems;

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- b. Investigation and follow-up of reported hazards and incidents;
- c. Trend analysis;
- d. Feedback from training;
- e. Flight data analysis;
- f. Safety surveys and operational oversight safety audits;
- g. Monitoring of normal operations;
- h. State investigation of accidents and serious incidents; and
- i. Information exchange systems.

38.4.3 Each hazard identified must be evaluated and prioritized. This evaluation requires the compilation and analysis of all available data. The data is then assessed to determine the extent of the hazard; is it a “one-of-a-kind” or is it systemic? A database may be required to facilitate the storage and retrieval of the data. Appropriate tools are needed to analyse the data.

38.4.4 Having validated a safety deficiency, decisions must then be made as to the most appropriate action to avoid or eliminate the hazard or reduce the associated risks. The solution must take into account the local conditions, as “one size” does not fit all situations. Care must be taken that the solution does not introduce new hazards. This is the process of risk management.

38.4.5 Once appropriate safety action has been implemented, performance must be monitored to ensure that the desired outcome has been achieved, for example:

- a. The hazard has been eliminated (or at least the associated risks have been reduced in probability or severity).
- b. The action taken permits coping satisfactorily with the hazard.
- c. No new hazards have been introduced into the system.

38.4.6 If the outcome is unsatisfactory, the whole process must be repeated.

38.5 KEY SAFETY MANAGEMENT ACTIVITIES

38.5.1 Those organizations which manage safety most successfully practice several common activities. Some of those specific activities are—

38.5.1.1 **Organization.** They are organized to establish a safety culture and to reduce their accidental losses.

- a. **Safety assessments.** They systematically analyse proposed changes equipment or procedures to identify and mitigate weaknesses before change is implemented.
- b. **Occurrence reporting.** They have established formal procedures for reporting safety occurrences and other unsafe conditions.
- c. **Hazard identification schemes.** They employ both reactive and proactive schemes for identifying safety hazards throughout their organization, such as voluntary incident reporting, safety surveys, operational safety audits, and safety assessments. There are

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several safety processes that are effective in the identification of safety hazards, for example, Flight Data Analysis (FDA), Line Operations Safety Audit (LOSA) and Normal Operations Safety Survey (NOSS).

- d. **Investigation and analysis.** They follow up on reported occurrences and unsafe conditions and, if necessary, initiate competent safety investigations and safety analyses.
- e. **Performance monitoring.** They actively seek feedback necessary to close the loop of the safety management process using such techniques as trend monitoring and internal safety audits.
- f. **Safety promotion.** They actively disseminate the results of safety investigations and analyses, sharing safety lessons learned both within the organization and outside, if warranted.
- g. **Safety oversight.** The State (regulator) and regulated organization both have systems in place to monitor and assess safety performance.

38.6 SAFETY MANAGEMENT PROCESS

38.6.1 Safety management is evidence-based, in that it requires the analysis of data to identify hazards. Using risk assessment techniques, priorities are set for reducing the potential consequences of the hazards.

38.6.1.1 The risk is less than the predetermined unacceptable limit;

38.6.1.2 The risk has been reduced to a level that is as low as reasonably practicable; and

38.6.1.3 The benefits of the proposed system or changes are sufficient to justify accepting the risk.

All three of the above criteria should be satisfied before a risk is classed as tolerable.

38.6.2 Even where the risk is classed as acceptable (tolerable), if any measures that could result in the further reduction of the risk are identified, and these measures require little effort or resources to implement, then they should be implemented.

38.6.3 The acronym **ALARP** is used to describe a risk that has been reduced to a level that is **as low as reasonably practicable**. In determining what is “*reasonably practicable*” in this context, consideration should be given to both the technical feasibility of further reducing the risk, and the cost; this could include a cost-benefit study.

38.6.4 Showing that the risk in a system is ALARP means that any further risk reduction is either impracticable or grossly outweighed by the costs. It should, however, be borne in mind that when an individual or society “accepts” a risk, this does not mean that the risk is eliminated. Some level of risk remains; however, the individual or society has accepted that the residual risk is sufficiently low that it is outweighed by the benefits.



38.7 GUIDANCE FOR AIR OPERATORS IN ESTABLISHING A FLIGHT SAFETY DOCUMENTS SYSTEM

38.7.1 DEFINITIONS

The following definitions are reproduced for ease of reference:

38.7.1.1 **Flight safety documents system** means a set of inter-related documentation established by the operator, compiling and organizing information necessary for flight and ground operations, and comprising, as minimum, the operations manual and the operator's maintenance control manual.

38.7.1.2 **Quality assurance** means all those planned and systematic actions necessary to provide adequate confidence that a system, component, or facility will perform satisfactorily in service.

38.7.1.3 **Safety management system (SMS)** means a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

38.7.2 BACKGROUND

38.7.2.1 The findings of the ICAO Universal Safety Oversight Audit Program (USOAP) include, among others, deficiencies in compliance with Standards and Recommended Practices (SARPs) regarding operational documents required by Annex 6. These specific findings refer to deficiencies in operations manuals and maintenance control manuals.

38.7.2.2 Analysis of accident information revealed that in accident reports involving international commercial air transport aircraft and in incident reports, deficiencies in operational documents were considered contributing factor to the events.

38.7.2.3 The International Civil Aviation Organization has adopted a Standard in Annex 6, Operations of Aircraft, Part I, requiring that an operator establish a flight safety documents system for the use and guidance of operational personnel as part of its accident prevention and flight safety program.

38.7.3 FLIGHT SAFETY DOCUMENT SYSTEM

38.7.3.1 It should be understood that the development of a flight safety documents system is a complete process, and that changes to each document comprising the system may affect the entire system. Guidelines applicable to the development of operational documents have been produced by CAA and are available to air operators. Nevertheless, it may be difficult for operators to make the best use of these guidelines, since they are distributed across a number of publications.

38.7.3.2 Furthermore, guidelines applicable to operational documents development tend to focus on a single aspect of documents design, for example, formatting and typography. Guidelines rarely cover the entire process of operational documents development.

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38.7.3.3 It is important for operational documents to be consistent with each other, and consistent with regulations, manufacturer requirements and Human Factors principles. It is also necessary to ensure consistency across departments as well as consistency in application. Hence the emphasis should be placed on an integrated approach, based on the notion of the operational documents as a complete system.

38.7.3.4 The guidelines in this manual address the major aspects of an operator's flight safety documents system development process, with the aim of ensuring compliance with Implementing Standards (IS) 002. The guidelines are based not only upon scientific research, but also upon current best industry practices, with an emphasis on a high degree of operational relevance.

38.7.4 ORGANIZATION

38.7.4.1 A flight safety documents system should be organized according to criteria which ensure easy access to information required for flight and ground operations contained in the various operational documents comprising the system and which facilitate management of the distribution and revision of operational documents.

38.7.4.2 Information contained in a flight safety documents system should be grouped according to the importance and use of the information, as follows:

- a. Time critical information, e.g., information that can jeopardize the safety of the operation if not immediately available;
- b. Time sensitive information, e.g., information that can affect the level of safety or delay the operation if not available in a short time period;
- c. Frequently used information;
- d. Reference information, e.g., information that is required for the operation but does not fall under b) or c) above; and
- e. Information that can be grouped based on the phase of operation in which it is used.

38.7.4.3 Time critical information should be placed early and prominently in the flight safety documents system.

38.7.4.4 Time critical information, time sensitive information, and frequently used information should be placed in quick-reference guides.

5 38.7.4.5 The flight safety documents system should be validated before deployment, under realistic conditions. Validation should involve the critical aspects of the information use, in order to verify its effectiveness. Interactions among all groups that can occur during operations should also be included in the validation process.

38.7.4.6 A flight safety documents system should maintain consistency in terminology and in the use of standard terms for common items and actions.

38.7.4.7 Operational documents should include a glossary of terms, acronyms and their standard definition, updated on a regular basis to ensure access to the most recent terminology.

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All significant terms, acronyms and abbreviations included in the flight documents system should be defined.

38.7.4.8 A flight safety documents system should ensure standardization across document types, including writing style, terminology, use of graphics and symbols, and formatting across documents. This includes a consistent location of specific types of information, consistent use of units of measurement and consistent use of codes.

38.7.4.9 A flight safety document system needs to include a verification mechanism to ensure that, whenever a section of a document is amended, all other documents likely to be affected are identified and that consequential amendments are duly coordinated and agreed to by the responsible departments before the amendment is processed.

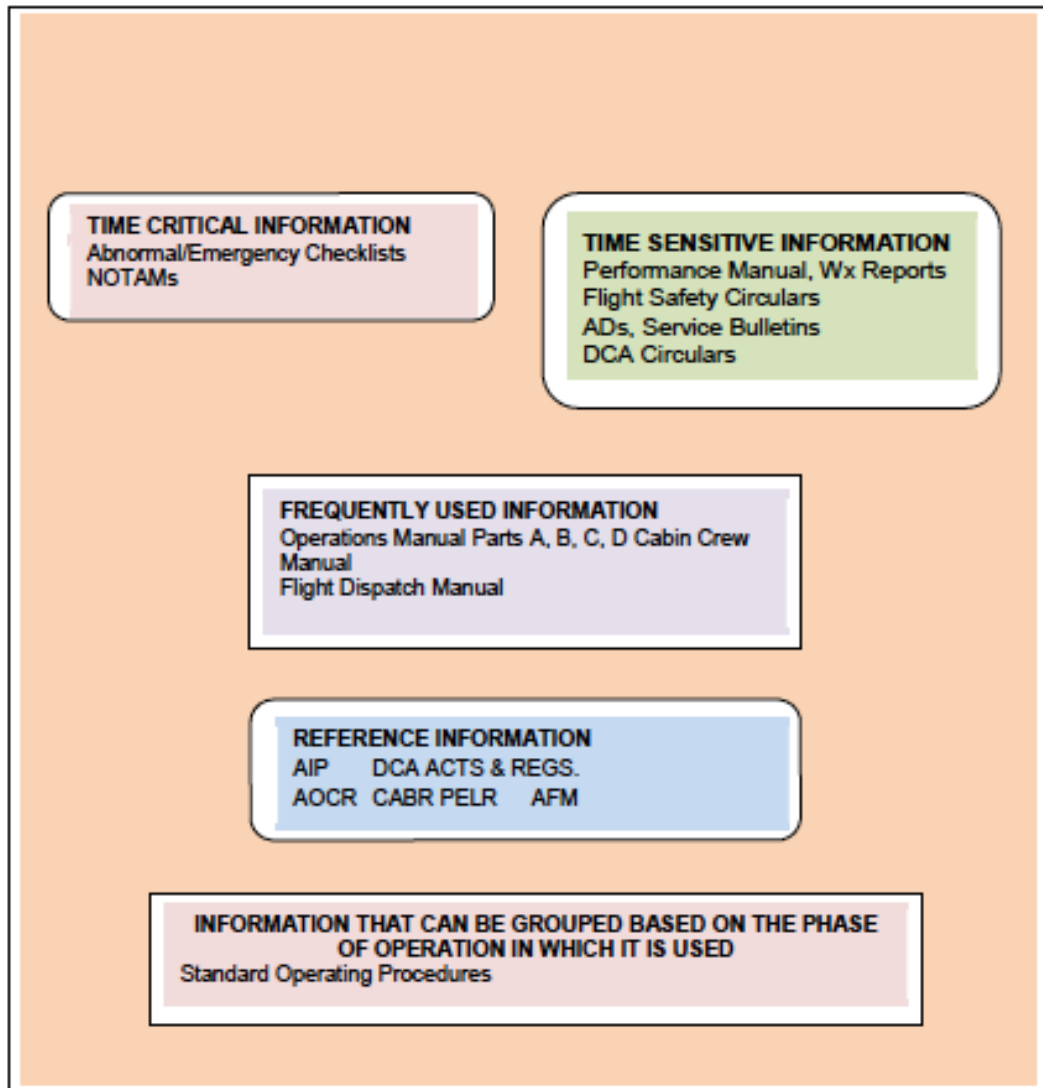
38.7.5 APPLICABILITY

38.7.5.1 Air operators who have yet to establish a flight safety document system should utilize the information contained in this manual in establishing such a system. Air operators who have established such a system should verify that the functionality of their system is in compliance with the concepts outlined in manual. CAA inspectors will be conducting a review of the flight safety document system to ensure that it is effective in providing vital safety information to flight crew in a timely manner.



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The principles of the Flight Safety Documentation System apply to the following documents as an example:





APPENDIX 38A



Form No; CAA/OP/CL/

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Operator:	Date:	Location:	Inspector:
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S. No;	SMS Framework	Response (Yes/No)	If yes, state where the requirement is addressed. If No record how compliance with the requirement will be achieved
1. Safety Policy and Objectives			
a	Is a safety management system (SMS) With defined components/elements established, maintained and adhered to? (Pg.5)		
b	Is the SMS appropriate to the size, Nature and complexity of the organization?		
c	Is the safety policy adequately displayed by the CEO?		
d	Is the safety policy promoted by the accountable executive?		
e	Is the safety policy Promoted by the Accountable Manager ?		
f	Is the safety policy reviewed Periodically?		
g	Does the safety policy clearly indicate Which types of operational behaviors are acceptable or unacceptable?		
h	Is there a safety reporting policy that clearly includes the conditions under which reporter immunity from disciplinary action would be considered		
i	Have safety objectives been established?		
j	Is there a formal process to develop Safety objectives?		
k	Are safety objectives publicized and Distributed?		



I	Is there a formal process to develop and maintain a set of safety performance indicators and safety performance markers?		
2. Safety Accountabilities			
a	Has an accountable executive been identified?		
b	Does the accountable executive have responsibility for ensuring that the SMS is properly implemented and performing to requirements in all relevant areas of the organization?		
c	Does the accountable executive have control of the financial and human resources required to ensure the proper performance of the SMS?		
d	Have the safety accountabilities of all members of senior management been identified, documented and communicated throughout the organization?		Refer O chart & Descriptions
e	Has a qualified person been appointed to be the focal point for the daily operation of the SMS?		
f	Does the person appointed as focal point for the daily operation of the SMS fulfil the required job functions and responsibilities?		
g	Are the safety responsibilities and Accountabilities of personnel at all levels of the organization defined and documented?		
h	Is there consolidated documentation that describes the SMS and the Interrelationships between all its components?		
i	Has a documented procedure been established and maintained for identifying applicable regulatory requirements?		
j	Are regulations, standards and exemptions periodically reviewed to ensure that the most current information is available?		
3. Coordination of Emergency Response Planning			
a	Does the organization have an Emergency response/contingency procedure appropriate to the size,		



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	nature and complexity of the organization?		
b	Have the emergency response/Contingency procedures been documented, implemented and assigned to a responsible manager?		
c	Are the emergency response/Contingency procedures been periodically reviewed?		
d	Does the organization have a process to distribute the emergency response/contingency procedures and to communicate the content to all personnel?		
e	Does the organization conduct drills and exercises with all key personnel at specified intervals, as applicable?		

4. SMS Documentation

a	Does this information reside or is it incorporated into approved Documentation, such as the Operations Manual, Maintenance Control Manual, or Airport Operations Manual, as applicable, and where these approved documents are not required by regulation, the organization includes the information in a separate, controlled document?		
b	Does the organization have a records System that ensures the generation and retention of all records necessary to document and support operational requirements, and is in accordance with applicable regulatory requirements and industry best practices?		
c	Does the system provide the control Processes necessary to ensure appropriate identification, legibility, storage, protection, archiving, retrieval, retention time, and disposition of records?		

5. Safety Risk Management

a	Does the organization have a reactive method that provides for the capture of internal safety information including hazard identification, occurrences and		Documentary Evidence 1. Ramp/Cargo 2. ASGR 3. Accident/Incident Reports
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	other data relevant to safety risk management?		4. Cabin Safety incident forms
b	Is the reactive reporting process simple, accessible and commensurate with the size of the organization?		
c	Are reactive reports reviewed at the Appropriate level of management?		
d	Does the organization have a proactive method that provides for the capture of internal information including hazard identification , occurrences and other data relevant to safety risk management?		
e	Is the proactive reporting process simple, accessible and commensurate with the size of the organization?		
f	Are proactive reports reviewed at the appropriate level of management?		
g	Does the organization have a predictive method that provides for the capture of internal information including hazard identification, occurrences and other data relevant to safety risk management?		
h	Is predictive safety information reviewed at the appropriate level of management?		
i	Is there a feedback process to notify contributors that their reports have been received and to share the results of the analysis?		
j	Are corrective and preventive actions Generated in response to safety data analysis?		
k	Is there a structured process for the Analysis of risk associated with identified hazards, expressed in terms of severity, and probability of occurrence?		
l	Are there criteria for assessing risk in terms of tolerability (i.e., the acceptable level of risk the organization is willing to accept)?		
m	Does the organization have risk Management control strategies that include corrective/preventive mitigation action of risks to an acceptable level?		1. Engineering 2. Ground Services 3. Cabin Safety
6. Safety Assurance			



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a	Is there a process in place to monitor and analyze safety trends?		
b	Do measures exist that ensure all Reported occurrences and deficiencies are investigated?		
c	Is there a process to ensure that Occurrences and deficiencies reported are analyzed to identify all associated hazards?		
d	Are corrective and preventative actions generated in response to event investigation and risk analysis?		
e	Does the organization have a process for evaluating the effectiveness of the corrective/preventive measures that have been developed?		
f	Are corrective/preventive actions, Including timelines, documented?		
g	Is there a process to evaluate the Effectiveness of corrective actions?		
h	Does the organization have a system to monitor the internal reporting process and the associated corrective actions?		
i	Are regular and periodic reviews conducted regarding the organization safety performance, internal audit results, hazard and occurrence investigations, hazard and occurrence analysis results, internal/external feedback analysis results, status of corrective actions, follow -up actions from management reviews, changes that could affect safety, recommendations for improvement and sharing of best practices across the organization?		
j	Has the organization implemented self Evaluation processes, such as regularly scheduled safety audits, safety surveys, safety reviews, and safety studies?		
k	Is there an operationally independent audit function with the authority required to carry out an effective internal evaluation program?		
l	Does the audit system cover all Functions, activities and organizations within the company?		
m	Are there defined audit scope, criteria, Frequency and methods?		
n	Are there selection/training process to		



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	Ensure the objectivity and competence of auditors as well as the impartiality of the audit process?		
o	Is there a procedure for reporting audit Results and maintaining records?		
p	Is there a procedure outlining Requirements for timely corrective and preventive action in response to audit results?		
q	Is there a procedure to record Verification of action(s) taken and the reporting of verification results?		
r	Is a process in place for analyzing Changes to operations or key personnel for risks?		
s	Does the organization perform periodic management reviews of safety critical functions and relevant safety issues that arise from the internal evaluation program?		
t	Are there procedures in place for the conduct of internal safety investigations?		
7. Safety Promotion/ SMS Training			
a	Is there a documented process to identify training requirements so that personnel are competent to perform their duties?		
b	Is there a process that measures the effectiveness of training?		
c	Is the organization's safety training Incorporated into indoctrination training upon employment?		
d	Is there emergency response and Response training for affected personnel?		
e	Does the safety training ensure that all Personnel understand their responsibilities and accountabilities in regards to all safety management processes, decisions and actions?		
f	Are there communication processes in place within the organization that permit the safety management system to function effectively?		
g	Are communication processes (written, meetings, electronic, etc.) commensurate with the size and scope of the organization?		



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h	Is information established and Maintained in a suitable medium that provides direction in related documents?		News Letters/ Bulletins
i	Is there a process for the dissemination of safety information throughout the organization and a means of monitoring the effectiveness of this process?		Other Departments other than FLT. OPS.

8. Remarks

1. Safety Policy and Objectives

2. Safety Accountabilities

3. Coordination of Emergency Response Planning

4. SMS Documentation

5. Safety Risk Management

6. Safety Assurance

7. Safety Promotion



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Overall Result:	Inspector's Signature:
Satisfactory <input type="checkbox"/>	Inspector's Name:
Unsatisfactory <input type="checkbox"/>	Inspector's Code:



Appendix 38 B

FLIGHT SAFETY DOCUMENTS SYSTEM CHECKLIST

Applicant:

Verification performed by operations management personnel

NAME & TITLE OF POST

DATE:

OPS ref.	Requirement or acceptable means of compliance	Guidance for verification	Comments/Remarks/OM Reference
IS 002 ANNEX 6 PART 1 ATTACHMENT F1.1	An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.	Confirm that the development of flight safety documents system is a complete process, and changes to each document comprising the system may affect the entire system.	
IS 002 ANNEX 6 PART 1 F1.2	Operational documents are to be consistent with each other, and consistent with regulations, manufacturer requirements and Human Factors principles.	Have you stated in OM that all operational documents shall be consistent with each other, and consistent with regulations, manufacturer requirements and Human Factors principles?	
IS 002 5C ANNEX 6 PART 1 ATTACHMENT F 2.1	A flight safety documents system should be organized according to criteria which ensure easy access to information required for flight and ground operations contained in the various operational documents comprising the system and which facilitate management of the distribution and revision of operational documents.	1. Specify the presented forms, including the electronic form. 2. How the accessibility, usability and reliability are assured? 3. Specify all parts of the OM, including manuals or other items which may be included in the OM. 4. Has the content and amendment status of the manual controlled and clearly indicated? Specify the person(s) who may approve amendments or revisions. Specify the conditions for temporary revisions and/or immediate amendments or revision required in the interest of safety. Specify the methods by which operator personnel are advised of the changes.	
ANNEX 6 PART 1 Attachment F 2.2 a-e	Information contained in a flight safety documents system should be grouped according to the importance and use of the information.	Specify how the following information is grouped: a) time-critical information, e.g., information that can jeopardize the safety of the operation if not immediately available; b) time-sensitive information, e.g., information that can affect the level of safety or delay the operation if not available in a short time period; c) frequently used information;	



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		d) reference information, e.g., information that is required for the operation but does not fall under b) or c) above; and e) information that can be grouped based on the phase of operation in which it is used	
ANNEX 6 PART1 Attachment F 2.3	Time-critical information should be placed early and prominently in the flight safety documents system.	Have you nominated a person or group of persons with the responsibility of ensuring that the organization remains in compliance with the applicable requirements? Are you capable of distributing operational instructions and other information without delay (specify the provisions)? Specify your operational support facilities at the main operating base, outstations and/or overseas stations.	
Attachment F 2.4	Time-critical information, time-sensitive information, and frequently used information should be placed in cards and quick-reference guides.	Specify the implementation of the provisions.	
Attachment F 3 VALIDATION	The flight safety documents system should be validated before deployment, under realistic conditions. Validation should involve the critical aspects of the information use, in order to verify its effectiveness. Interactions among all groups that can occur during operations should also be included in the validation process.	Provide information and documentation demonstrating the performed validation of flight safety documents system.	
Attachment F 4 DESIGN	A flight safety documents system should maintain consistency in terminology and in the use of standard terms for common items and actions.	Have you indicated the explanations and definitions of terms and words needed for the use of the manual? Specify the provisions of compiling an OM (e.g. type related part supplemented with, or substituted by applicable parts of AFM or AOM produced by the manufacturer of the aircraft; route and aerodrome part supplemented with, or substituted by applicable route guide material produced by a specialist company; material from another source copied and included directly in the relevant part of the OM, or the reference is specified to the appropriate section of that applicable material).	
Attachment F 4.2	Operational documents should include a glossary of terms, acronyms and their standard definition, updated on a regular basis to ensure access to the most recent terminology. All significant terms, acronyms and abbreviations included in the flight documents system should be defined.	Provide information and documentation demonstrating the performed validation of flight safety documents system.	
Attachment F 4.3	A flight safety documents system should ensure standardization across document types, including writing style, terminology, use of graphics and	Specify the procedures how the organization ensures compliance with the standardization provisions, including the cross	



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	symbols, and formatting across documents. This includes a consistent location of specific types of information, consistent use of units of measurement and consistent use of codes.	reference provisions when the organization management system documentation is included in a separate manual or in (one of) the manual(s).	
Attachment F 4.4	<p>A flight safety documents system should include a master index to locate, in a timely manner, information included in more than one operational document.</p> <p><i>Note: The master index must be placed in the front of each document and consist of no more than three levels of indexing.</i></p> <p><i>Pages containing abnormal and emergency information must be tabbed for direct access.</i></p>	Provide information and documentation demonstrating the performed validation of flight safety documents system.	
Attachment F 4.5	A flight safety documents system should comply with the requirements of the operator's quality system.	Provide information and documentation demonstrating the performed validation of flight safety documents system for the acceptance of operator's quality system quality assurance programme.	
Attachment F 5 DEPLOYMENT	Operators should monitor deployment of the flight safety documents system, to ensure appropriate and realistic use of the documents, based on the characteristics of the operational environment and in a way which is both operationally relevant and beneficial to operational personnel. This monitoring should include a formal feedback system for obtaining input from operational personnel.	Specify the procedures how the organization ensures compliance with the monitoring provisions and established and maintained feedback system.	
Attachment F 6.1	Operators should develop an information gathering, review, distribution and revision control system to process information and data obtained from all sources relevant to the type of operation conducted, including, but not limited to, the State of the Operator, State of design, State of Registry, manufacturers and equipment vendors.	Specify the established procedure, responsibilities and duties of a person or group of persons to process information and data obtained from all sources relevant to the type of operation conducted. Provide evidence (e.g. letters of intent or contracts) that you are actively procuring data from all sources relevant to the type of operation conducted.	
Attachment F 6.2	<p>Operators should develop an information gathering, review and distribution system to process information resulting from changes that originate within the operator.</p> <p><i>Note: Operators should ensure that crew coordination philosophy, policies and procedures are specific to their operation.</i></p>	<p>Confirm that the procedures have been established and validated concerning:</p> <ul style="list-style-type: none"> a) changes resulting from the installation of new equipment; b) changes in response to operating experience; c) changes in an operator's policies and procedures; d) changes in an operator certificate; and e) changes for purposes of maintaining cross fleet standardization 	
Attachment F 6.3	A flight safety documents system should be reviewed.	Confirm that the procedures have been established and validated:	



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		<p>a) on a regular basis (at least once a year);</p> <p>b) after major events (mergers, acquisitions, rapid growth, downsizing, etc);</p> <p>c) after technology changes (introduction of new equipment); and</p> <p>d) after changes in safety regulations</p>	
Attachment F 6.4	<p>Operators should develop methods of communicating new information. The specific methods should be responsive to the degree of communication urgency.</p> <p><i>Note: As frequent changes diminish the importance of new or modified procedures, it is desirable to minimize changes to the flight safety documents system.</i></p>	<p>Specify the established and maintained procedures on communication about safety matters that:</p> <p>a) ensures that all personnel are aware of the safety management activities;</p> <p>b) conveys safety critical information, especially relating to assessed risks and analysed hazards;</p> <p>c) explains why particular actions are taken; and</p> <p>d) explains why safety procedures are introduced or changed</p>	
Attachment F 6.5	<p>New information should be reviewed and validated considering its effects on the entire flight safety documents system.</p>	<p>Specify the established and maintained procedures of documented process to identify external and internal change that may have an adverse effect on safety.</p>	
Attachment F 6.6	<p>The method of communicating new information should be complemented by a tracking system to ensure currency by operational personnel. The tracking system should include a procedure to verify that operational personnel have the most recent updates.</p>	<p>Verify the establishment and maintenance of Quality Assurance Programme, reflecting the monitoring of recording system.</p>	

Declaration

I declare that the information given in this form is true to ensure compliance with ICAO Annex 6 flight safety documents system provisions.

Post Holder Flight Operations:

Name

Signature

Date

For Official Use

Contents checked against the information in formal application package.

Flight Operations Inspector CAASL

Signature

Date



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For information:

Director Operations CAASL

Signature

Date



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Chapter 39 - ACCIDENT PREVENTION PROGRAMS

39.1 ICAO REQUIREMENTS

- 39.1.1 ICAO requires that operators establish and maintain an accident prevention and flight safety programme.
- 39.1.2 Some of the basic ingredients of an effective accident prevention and flight safety programme are requirements for—
- b. Incident reporting systems;
 - c. Database systems;
 - d. Analysis of data and preventive action; and
 - e. Exchange of safety information.
- 39.1.3 The accident prevention and flight safety programme should be documented in a company's operation manual, including a statement on the company's safety policy and the responsibility of personnel. To ensure the necessary focus, the safety programme is often contained in a separate volume of the company operations manual.

39.2 ORGANIZATIONAL RESPONSIBILITIES

- 39.2.1 The responsibility for preventing accidents goes well beyond the cockpit. It is a shared responsibility involving a wide spectrum of organizations and institutions. These include international organizations, major aircraft and power-plant manufacturers, State regulatory authorities for civil aviation, owners and operators, maintenance organizations, industry and professional associations, aviation education and training institutions, etc. Further, third parties that provide aviation support services (including contracted services) must also share in the responsibility for accident prevention — observing the safety standards pertinent to their areas of endeavour.
- 39.2.2 To reduce the severity and probability of mishaps, each of these institutional stakeholders has particular roles to perform diligently. Generally, these organizational responsibilities fall into the following areas—
- a. Defining policies and standards affecting accident prevention;
 - b. Allocating resources to sustain accident prevention initiatives and activities;
 - c. Providing expertise for the identification and evaluation of safety hazards;
 - d. Taking safety action to eliminate or reduce systemic hazards to what has been decided is an acceptable level of risk;
 - e. Incorporating technical advances in design and maintenance of equipment; Conducting safety oversight and accident prevention programme evaluation; Contributing to the investigation of accidents and serious incidents;

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- f. Keeping abreast of best industry practices, adopting these as appropriate;
- g. Promoting aviation safety (including the exchange of safety-related information); and
- h. Amending regulations governing civil aviation safety as required.

39.3 AIRLINE OPERATORS

- 39.3.1 Most major airlines employ many of the accident prevention activities outlined in this manual, while many of the smaller airlines may not employ any. Where such activities exist, they are usually carried out by a section or safety office which monitors overall operating experience and provides independent advice to company management on the preventive action needed to eliminate or avoid identified hazards. Such activities may also lead to economies in the airlines operation.
- 39.3.2 These prevention activities usually include some form of incident reporting, safety surveys and audits and information feedback by means of periodic safety magazines, bulletins, newsletters, or the company's website.
- 39.3.3 The safety aspects of the engineering/manufacturing side of an airline are often the responsibility of a Quality Control Manager/Chief Inspector. Accident prevention programmes have tended to be oriented towards the flight operations side of the organization. Safety, however, must embrace the total airline and it is essential that a close working relationship be maintained between all parts of the organization.
- 39.3.4 A State's civil aviation authority uses regulations, standards, recommended procedures and other guidelines to help operators manage the risks inherent in aviation. However, regulations may not always fit an airline's safety needs perfectly. Airlines which rely on regulatory compliance as the cornerstone of their accident prevention and risk management programmes, may not achieve the results they desire.

39.4 GENERAL AVIATION

- 39.4.1 In many States, general aviation accidents constitute a major loss of resources. As a consequence, substantial benefits are to be gained from accident prevention programmes aimed at this group. In addition, general aviation operators often share facilities such as aerodromes, air traffic services, etc. with airline operators. This mixing of operations with differing requirements and performance standards may introduce hazards.
- 39.4.2 General aviation embraces a wide range of aircraft types, crew qualifications and operating environments. In many States it includes the expanding areas of corporate or business flying, often operating sophisticated aeroplanes or helicopters flown by professional pilots; through to non-professional pilots who only fly occasionally for pleasure. Motivating an interest and awareness of safe aviation practices is a challenge for an accident prevention programme aimed at this varied group.
- 39.4.3 Specialized general aviation aerial work operations, such as firefighting and aerial application, create unique hazards which have led some States to conduct safety programmes aimed specifically at these groups.



39.5 SERVICE PROVIDERS

39.5.1 Safe and efficient flight operations depend on effective delivery of a variety of supporting services. Operators may provide some of these services themselves, or they may contract these services out to specialist service providers. Such services include—

- a. Aircraft maintenance, repair and overhaul;
- b. Flight planning, flight dispatch and flight following;
- c. Ramp handling; and
- d. Crew training, etc.
- e. Other key services, which are supplied by providers external to the operator, include:
- f. Air Traffic Control;
- g. Aerodrome operations, including airport emergency services;
- h. Airport security; and
- i. Navigation aids.

39.5.2 Traditionally, such external services have been provided by the State — usually through their civil or military aviation authorities. However, civil aviation authorities in some States have discovered potential conflicts of interests in the dual roles of the State as both a regulator and as a service provider. Moreover, some States believe that there are operational efficiencies and economies to be gained through the coordination of many of these services. As a result, some States have delegated responsibilities for the provision of many such services.

39.5.3 Regardless of the ownership or management structure for the provision of such supporting services, responsible managers are expected to develop and implement accident prevention (or loss control) programmes within these separate areas of expertise. The guidance material provided in this manual applies equally to the provision of such support services, regardless of whether they are governed by State-run or corporate management.

39.6 THIRD PARTY CONTRACTORS

39.6.1 The provision of services supporting flight operations has long involved private contractors in such areas as refuelling, catering and other aircraft ground services, runway and taxiway construction and repair, etc. Indeed, the number of disparate vehicles on any busy airport ramp reflects the number of third party contractors.

39.6.2 Whether a large corporate contractor or small entrepreneur, the contracting authority holds overall responsibility for managing the safety risks taken by the contractor. The contract must specify safety standards to be met. The contracting authority then has the responsibility of ensuring the contractor complies with the safety standards prescribed in the contract.

39.6.3 The relationship between the contracting authority and a contractor is more than a legal situation. It represents the best interests of both parties. For example, an airline must protect its revenue source (the fare-paying public) by ensuring that its approved maintenance



organization (AMO) provides airworthy aircraft; and the AMO would understand that sub-standard service would compromise future work with the airline.

39.7 ORGANIZATIONAL CLIMATE

39.7.1 Above all, management sets the organizational climate for safety. Without management's wholehearted commitment to safety, any accident prevention programme will be largely ineffective. In positively reinforcing safety actions, management sends the message to all staff that it really cares about safety and they had better too.

39.7.2 To establish safety as a core value of the organization, it is necessary to make safety an integral part of the management plan. This can be done by setting objectives and safety goals, then holding managers and employees accountable for achieving those goals. Staff, then look to management for:

39.7.2.1 ***Clear direction*** in the form of credible policies, objectives, goals, standards, etc.; ***Time*** for meetings, setting and communicating policies and standards, etc.;

39.7.2.2 ***Adequate resources*** to fulfil assigned tasks safely and efficiently; and

39.7.2.3 ***Expertise*** in terms of access to experience through safety literature, training, seminars, etc.

39.7.3 The special onus on management for accident prevention applies, regardless of the size or type of organization providing the aviation service. The role of management in accident prevention is a recurring theme throughout this document.



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Chapter 40 - LINE OPERATIONAL SAFETY AUDIT PROGRAMS

40.1 LINE OPERATIONAL SAFETY AUDITS

40.1.1 BACKGROUND

- 40.1.1.1 Increasingly, the aviation industry is recognizing the need to anticipate the negative consequences of human error.
- 40.1.1.2 Hazards can be identified, analysed and validated based on data collected through the monitoring of day-to-day operations. Line Operational Safety Audits (LOSA) is another method for monitoring normal flight operations for accident prevention purposes.
- 40.1.1.3 Like Flight Data Analysis (FDA) programmes, LOSA facilitates hazard identification through the analysis of actual in-flight performances. Whereas FDA provides accurate data on exceedances from expected aircraft performance, LOSA provides information on human behaviour; it facilitates understanding the context for the behaviour that may have precipitated the exceedances.
- 40.1.1.4 While FDA and LOSA are well suited for application in larger airline operations, they can both be used very effectively in smaller airlines and are increasingly being used by them.
- 40.1.1.5 LOSA is a tool for the management of human errors in flight operations. It is used to identify the threats to aviation safety which lead to human errors, to minimize the risks that such threats may generate and to implement measures to manage these errors within the operational context.
- 40.1.1.6 LOSA enables operators to assess their resistance to operational risks and front-line personnel errors. Using a data-driven approach, they can prioritize these risks and identify actions to prevent accidents. In short, LOSA is a risk management tool.
- 40.1.1.7 By observing normal day-to-day flight operations, data about flight crew behaviour and situational factors in “normal” operations are collected. Thus, LOSA facilitates understanding both successful behaviour and failures. Hazards deriving from operational errors can be identified and effective countermeasures developed.
- 40.1.1.8 LOSA uses experienced and specially trained observers to collect data about flight crew behaviour and situational factors on “normal” flights. During audited flights, observers record error-inducing circumstances and the crew’s responses to them. The audits are conducted under strict non-punitive conditions, without fear of disciplinary action for detected errors. Flight crews are not required to justify their actions. Data from LOSA also provide a picture of system operations that can guide strategies in regard to accident prevention, training and operations.
- Like FDA programmes, data collected through LOSA can provide a rich source of information for the pro-active identification of systemic safety hazards.
 - A particular strength of LOSA is that it identifies examples of superior performance that can be reinforced and used as models for training. (Traditionally, the industry has collected information on failed performance and revised training programmes accordingly.)

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- c. With LOSA, training interventions can be based on the most successful operational performance.
- For example, based on LOSA data, CRM training can be modified to reflect best practices for coping with particular types of unsafe conditions and for managing typical errors related to these conditions.

40.2 TERMINOLOGY

40.2.1 LOSA employs specific terminology concerning threats, errors, threat and error management and countermeasures—

40.2.2 THREATS

40.2.2.1 During normal flights, crews routinely face situations created outside the cockpit that they must manage. Such situations increase the operational complexity of their task and pose some level of safety risk. These external situations may be relatively minor (such as frequency congestion), through to major (such as an engine-fire warning). In LOSA, such situations are referred to as *threats*.

40.2.2.2 Some threats can be anticipated (such as a high workload situation during approach) and the crew may brief in advance, for example, “In the event of a go-around...”. Other threats may be unexpected. Since they occur without warning, no advanced briefing is feasible, (for example, a TCAS advisory).

40.2.3 ERRORS

40.2.3.1 Humans are generally quite effective in balancing the conflicting demands between “*getting the job done*” and “*getting the job done safely*”. However, errors are a normal part of all human behaviour — including the performance of flight crews. In an operational context, flight crew errors tend to reduce the margin of safety and increase the probability of accidents.

40.2.3.2 Any action or inaction by the flight crew that leads to deviations from expected behaviour may be viewed as an error. Examples of crew errors might include non-compliance with regulations and SOPs, or unexpected deviation from company or ATC expectations. Errors may be minor (setting the wrong altitude, but correcting it quickly) or major (not completing an essential checklist item).

40.2.3.3 LOSA employs five categories of crew errors. These include—

- Communication error.** Miscommunication, misinterpretation, or failure to communicate pertinent information among the flight crew or between flight crew and an external agent (for example, ATC or ground operations personnel);
- Proficiency error.** Lack of knowledge or psychomotor (“*stick and rudder*”) skills;
- Operational decision error.** Decision-making error that is not standardized by regulation or operator procedures and that unnecessarily compromises safety. (For example, a crew decision to fly through a known wind shear on approach instead of going-around.);



- d. **Procedural error.** Deviation in execution of regulatory and/or operator procedures. The intention is correct but the execution is flawed. This category also includes errors where a crew forgot to do something; and
- e. **Intentional non-compliance error.** Wilful deviation from regulations and/or operator procedures (i.e. violations).

40.3 THREAT & ERROR MANAGEMENT

40.3.1 Since threats and errors are an integral part of daily flight operations, systematic understanding of them is required for safely dealing with them.

40.3.2 LOSA DATA

40.3.2.1 LOSA offers an informed perspective on threats and errors from which suitable coping strategies can be developed. Specifically, quantifiable LOSA data are useful in answering such questions as—

40.3.2.2 What type of threats do flight crews most frequently encounter? When and where do they occur, and what types are the most difficult to manage?

40.3.2.3 What are the most frequently committed crew errors, and which ones are the most difficult to manage?

40.3.2.4 What outcomes are associated with mismanaged errors? How many result in the aircraft being in an “undesired” state (such as fast/slow on final approach)?

40.3.2.5 Are there significant differences between airports, fleets, routes or phases of flight *vis à vis* threats and errors?

40.3.3 SYSTEMIC COUNTERMEASURES

40.3.3.1 Accepting that error is inevitable, the most effective countermeasures go beyond trying to simply prevent errors. They need to highlight unsafe conditions early enough to permit flight crews to take corrective action before adverse consequences result from the error. In other words, they “trap” the error.

40.3.3.2 The most effective countermeasures seek to improve the everyday work situation in which flight crews face the inevitable threats to safe performance, measures which give crews a “*second chance*” to recover from their errors. Such systemic countermeasures include changes in aircraft design, crew training, company operating procedures, management decisions, etc.

40.4 DEFINING CHARACTERISTICS OF LOSA

40.4.1 The following characteristics of LOSA ensure the integrity of the methodology and its data—

40.4.2 JUMP SEAT OBSERVATIONS DURING NORMAL FLIGHT OPERATIONS

40.4.2.1 LOSA observations are limited to routine flights (as opposed to line checks, or other training flights). Check pilots add to an already high stress level, thus providing an unrealistic picture of performance.

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- 40.4.2.2 The best observers learn to be unobtrusive and non-threatening, recording minimum detail in the cockpit.

40.4.3 JOINT MANAGEMENT & PILOT SPONSORSHIP

- 40.4.3.1 In order for LOSA to succeed as a viable accident prevention programme, both management and pilots support the project. Joint sponsorship provides “checks and balances” for the project to ensure that any necessary change will be made as a result of LOSA data.
- 40.4.3.2 A LOSA audit does not proceed without the endorsement of the pilots via a signed agreement with management. A LOSA steering committee with pilot and management representatives shares responsibility for the planning, scheduling, supporting observers and verifying the data.

40.4.4 VOLUNTARY CREW PARTICIPATION

- 40.4.4.1 Maintaining the integrity of LOSA within the airline is extremely important for long-term success.
- 40.4.4.2 One way to accomplish this goal is to collect all observations with voluntary crew participation.
- 40.4.4.3 Before conducting LOSA observations, an observer obtains the flight crew’s permission. If an airline conducting LOSA has an unreasonably high number of refusals by pilots to be observed, this may indicate that there are critical “trust” issues to be dealt with first.

40.4.5 COLLECTION OF ONLY DE-IDENTIFIED, CONFIDENTIAL SAFETY DATA

- 40.4.5.1 LOSA observers do not record names, flight numbers, dates or any other data that can identify a crew. This allows for a high level of protection against disciplinary action.
- 40.4.5.2 Airlines should not squander an opportunity to gain insight into their operations by having pilots fearful that a LOSA observation could be used against them in disciplinary proceedings.
- 40.4.5.3 In other words, LOSA must not only be seen to be non-punitive, it must be non-punitive.

40.5 TARGETED OBSERVATIONS

- 40.5.1 All data is collected on a specifically designed LOSA Observation Form. Typically, the following types of information are collected by the LOSA observer—
- 40.5.1.1 Flight and crew demographics such as city pairs, aircraft type, flight time, years of experience in that position and with that airline, and crew familiarity;
- 40.5.1.2 Written narratives describing what the crew did well and what they did poorly and how they managed threats or errors for each phase of the flight;
- 40.5.1.3 CRM performance ratings using validated behavioural markers;



- 40.5.1.4 Technical worksheet for the descent/approach/landing phases that highlight the type of approach flown, the landing runway and whether the crew met the parameters of a stabilized approach;
- 40.5.1.5 Threat management worksheet that details each threat and how it was handled;
- 40.5.1.6. Error management worksheet that lists each error observed, how each error was handled and the final outcome; and
- 40.5.1.7 Crew interview conducted during low workload periods of the flight, such as cruise, that asks pilots for their suggestions to improve safety, training, and flight operations.

40.5.2 **TRUSTED, TRAINED & STANDARDIZED OBSERVERS**

- 40.5.2.1 Observers are primarily pilots drawn from the line, training department, safety department, management, etc. Experienced LOSA observers from a non-affiliated airline may be more objective and serve to provide an anchor point for company observers, especially for companies initiating a new LOSA programme. Regardless of the source, it is critical that the observers are respected and trusted to ensure acceptance of LOSA by the line pilots. The observers must be trained in concepts of threat and error management and in the use of the LOSA rating forms. Standardized rating is vital to the validity of the programme.

40.5.2.2 **TRUSTED DATA COLLECTION SITE**

In order to maintain confidentiality, airlines must have a trusted data collection site. No observations can be misplaced or improperly disseminated within the airline, without compromising LOSA integrity. Some airlines use a “third party” to provide a neutral party for objective analysis of results.

40.5.2.3 **DATA VERIFICATION ROUND-TABLES**

Data-driven programmes like LOSA require data quality management procedures and consistency checks. For LOSA, round table discussions with representatives of management and the pilots association scan raw data for inconsistencies. The database must be validated for consistency and accuracy before a statistical analysis can proceed.

40.5.2.4 **DATA-DERIVED TARGETS FOR ENHANCEMENT**

As the data are collected and analysed, patterns emerge. Certain errors occur frequently, certain airports or activities are problematic, certain SOPs are ignored or modified, and certain manoeuvres pose particular difficulties. These patterns become targets for enhancement. The airline then develops an action plan and implements appropriate change strategies based on the input of expertise available to the airline. Through subsequent LOSA audits, the effectiveness of the changes can be measured.

40.5.2.5 **FEEDBACK OF RESULTS TO THE LINE PILOTS**

After a LOSA is completed; the airline’s management team and the pilots association have an obligation to communicate the findings to the line pilots. Pilots are interested not only in the results but also management’s plan for improvement.

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Chapter 41 - FLIGHT DATA ANALYSIS PROGRAMS

41.1 FLIGHT DATA ANALYSIS PROGRAMMES

41.1.1 Flight Data Analysis (FDA) programmes, sometimes referred to as Flight Data Monitoring (FDM), or Flight Operations Quality Assurance (FOQA), provide another tool for the proactive identification of hazards.

41.1.2 They are a logical complement to the incident reporting systems and to LOSA programmes.

41.1.3 WHAT IS AN FDA PROGRAMME

- a. Initially, the principal use of flight recorders was to aid accident investigators, especially in those accidents with no surviving crewmembers. However, early on, it was recognized that analysis of this recorded data was also useful for better understanding serious incidents. More progressive organizations saw further potential for analysing flight recorder data in aggregate.
- b. In the 1970s, several airlines realized that the flight parameters recorded in the mandatory Flight Data Recorders (FDR) provided valuable insights for safe flight operations. By routinely accessing these recorded flight parameters, using a secondary quick access recorder (QAR), much could be learnt about the safety of flight operations and the performance of airframes and engines. Valuable data about the things that go right in day-to-day operations was available, putting accident and incident data into perspective. As well, analysis of this de-identified data could assist in the identification of safety hazards before a serious incident or accident occurred.
- c. To capitalize on these benefits, such airlines set up systems and processes to retrieve and analyse flight data recorder across their fleets. Despite some controversy, the aviation industry is slowly adopting the practice of routinely analysing recorded data from routine operations in support of their accident prevention programmes. Now, rather than merely reacting to serious events, management has the capability to proactively identify safety hazards and mitigate risks.
- d. Any effective FDA programme requires the cooperation of the pilot group. It is essential that agreement is reached on the processes to be followed, in particular the non-punitive aspects of such a programme. Such details are normally contained in a formal agreement between management and their flight crew. An example of one such agreement is shown at the end of this chapter.
- e. For the purposes of this Manual, a Flight Data Analysis (FDA) Programme may be defined as—

A proactive and non-punitive programme for gathering and analysing data recorded during routine flights to improve flight crew performance, operating procedures, flight training, air traffic control procedures, air navigation services, or aircraft maintenance and design.



41.1.4 BENEFITS OF FDA PROGRAMMES

- a. Today, Flight Data Analysis (FDA) programmes are increasingly used for the monitoring and analysis of flight operations and engineering performance. FDA programmes are a logical component of a mature safety management system, particularly for larger airlines. Successful programmes encourage adherence to Standard Operating Procedures, deter non-standard behaviour and so enhance flight safety. They can detect adverse trends in any part of the flight regime and so facilitate the investigation of events other than those which have had serious consequences.
- b. Flight data analysis is used to detect flight parameter exceedances and to identify non-standard or deficient procedures, weaknesses in the ATC system, and anomalies in aircraft performance. FDA allows the monitoring of various aspects of the flight profile, such as the adherence to the prescribed take-off, climb, cruise, descent, approach and landing SOPs. Specific aspects of flight operations can be examined, either retrospectively to identify problem areas, or pro-actively prior to introducing operational change and subsequently, to confirm its effectiveness.
- c. While using flight recorder data during incident analysis is to be recommended, such recorded data provides the ability to compare a specific flight with the fleet profile thereby providing the ability to analyse the systemic aspects of an incident. It may be that the parameters of the incident vary only slightly from many other flights, possible indicating a requirement for change in operating technique or training. For example, it would be possible to determine whether a tail scrape on landing was an isolated event, or symptomatic of a wider mishandling problem, such as over-flaring on touchdown or improper thrust management procedures.
- d. Engine monitoring programmes require the automated analysis of flight recorder data for reliable trend analysis. The value of manually coded engine data is limited in terms of accuracy, timeliness and reliability. Using flight recorder data, accurate analysis is possible within a short time, thereby increasing the potential for preventive action. It is also possible to monitor other aspects of the airframe and systems.

41.2 CAASL REQUIREMENTS

- 41.2.1 Recognizing the potential for accident prevention, the CAASL-FS has introduced provisions for a flight data analysis programme to be part of an operator's accident prevention and flight safety programme.
- 41.2.2 Operators of larger aircraft authorised to conduct international commercial air transport operations will be accountable for the operation of a non-punitive FDA programme, which contains adequate safeguards to protect the source(s) of the data.
- 41.2.2 They may obtain the services of a specialist contractor to operate the programme.



41.2.3 USING AN FDA PROGRAMME

41.2.3.1 As already seen, FDA programmes offer a wide spectrum of potential applications for accident prevention, as well as improvements in operational efficiency and economy. Data aggregated from many flights may be useful to—

- a. Determine operating norms for day-to-day performance;
- b. Identify unsafe trends;
- c. Facilitate certification of equipment and SOPs;
- d. Identify operational hazards in specific operating procedures, fleets, domiciles, airports, ATC procedures, etc.;
- e. Monitor the effectiveness of specific safety actions taken;
- f. Support quality assurance programmes and safety audits;
- g. Reduce operating and maintenance costs;
- h. Optimize training procedures; and
- i. Provide a performance measurement tool for risk management programmes.

41.2.3.2 Typically, FDA data today are being used in five areas—

- a. Exceedance detection;
- b. Routine measurements;
- c. Incident investigations;
- d. Continuing airworthiness; and
- e. Linked databases (or integrated safety analysis).

41.2.4 EXCEEDENCE DETECTION

41.2.4.1 Initially, FDA programmes may be used for detecting exceedances or safety events, such as deviations from flight manual limits, standard operating procedures, or good airmanship. A set of core events (usually provided by the FDA software vendor in consultation with the operator/ manufacturer) establishes the main areas of interest to operators.

- a. Example: High lift-off rotation rate, stall warning, GPWS warning, flap limit speed Exceedance, fast approach, high/low on glide slope, heavy landing.

41.2.4.2 FDA provides useful information from safety events which can complement that provided in crew reports.

- a. Example: Reduced flap landing, emergency descent, engine failure, rejected take-off, go-around, TCAS or GPWS warning, system malfunctions, etc.

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41.2.4.3 Companies may also modify the set of core events (in accordance with the agreement with their pilots) to account for unique situations they regularly experience or the SOPs they use.

- a. Example: To avoid nuisance reports from a non-standard SID.

41.2.4.4 They may also define new events (with the agreement of the pilots) to address specific problem areas.

- a. Example: Restrictions on the use of certain flap settings to increase component life.

41.2.4.5 Care must be taken that in order to avoid an exceedance, crew do not attempt to fly the FDA profile rather than follow SOPs. Such an action can quickly turn a poor situation into something worse.

41.2.5 ROUTINE MEASUREMENTS

41.2.5.1 Increasingly, data is retained from all flights, not just the ones producing significant events. A selection of measures is retained that are sufficient to characterize each flight and allow comparative analysis of a wide range of operational variabilities.

41.2.5.2 Trends may be identified before there are statistically significant numbers of events. Emerging trends and tendencies are monitored before the trigger levels associated with exceedances are reached.

- a. Examples of parameters monitored: take-off weight; flap setting; temperature; rotation and lift-off speeds vs. scheduled speeds; maximum pitch rate and attitude during rotation; gear retraction speeds, heights and times.
- b. Examples of comparative analyses: pitch rates from high vs. low take-off weights; good vs. bad weather approaches; and touchdowns on short vs. long runways.

41.2.6 INCIDENT INVESTIGATION

41.2.6.1 Recorded data provide valuable information for follow-up to mandatory reportable incidents and other technical reports. Quantifiable recorded data have been useful in adding to the impressions and information recalled by the flight crew.

41.2.6.2 The recorded data also provide an accurate indication of system status and performance, which may help in determining cause and effect relationships.

41.2.6.3 Examples of incidents where recorded data could be useful—

- a. Emergencies, such as—
 - High speed rejected take-offs;
 - Flight control problems;
 - System failures, etc.;



- b. High cockpit workload conditions as corroborated by such indicators as—
- Late descent;
 - Late localizer and/or glide slope interception;
 - Large heading change below a specific height;
 - Late landing configuration;
 - Unsterilized and rushed approaches, glide path excursions, etc.;
 - Exceedances of prescribed operating limitations (such as flap limit speeds, engine over temperatures V speeds, stall onset conditions, etc.); and
 - Wake vortex encounters, low-level wind shear, turbulence encounters or other vertical accelerations, etc.

41.2.7 CONTINUING AIRWORTHINESS

41.2.7.1 Both routine and event data can be utilized to assist the continuing airworthiness function.

41.2.7.2 Traditionally, engine-monitoring programmes have looked for measures of engine performance to determine operating efficiency and predict impending failures. The engine manufacturer normally supplies these programmes.

- a. Examples of continuing airworthiness uses: engine thrust level and airframe drag measurements; avionics and other system performance monitoring; flying control performance; brake and landing gear usage.

41.2.8 INTEGRATED SAFETY ANALYSIS

41.2.8.1 All the data gathered in an FDA programme should be kept in a central safety database. By linking the FDA database to other safety databases (such as incident reporting systems and technical fault reporting systems), a more complete understanding of events becomes possible through cross-referencing the various sources of information. Care must be taken however, to safeguard the confidentiality of FDA data when linking it to identified data.

- a. Example of integration: A heavy landing results in a crew report, an FDA event and an engineering report. The crew report provides the context, the FDA event the quantitative description and the engineering report the result.

41.2.6.2 The integration of all available sources of safety data provides the company safety management system with viable information on the overall safety health of the operation.

41.3 FDA EQUIPMENT

41.3.1 FDA programmes generally involve systems that capture flight data, transform the data into an appropriate format for analysis, and generate reports and visualization to assist in assessing the data.

41.3.2 The level of sophistication of the equipment can vary widely. Typically, however, the following equipment capabilities are required for effective FDA programmes—

- a. An on-board device to capture and record data on a wide range of in-flight parameters (such as altitude, airspeed, heading, aircraft attitude, aircraft configuration, etc.);

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- b. A means to transfer the data recorded on-board the aircraft to a ground-based processing station. In the past, this largely involved the physical movement of the memory unit from the QAR (either tape, optical disc, or solid state). To reduce the physical effort required, later transfer methods utilize wireless technologies;
- c. A ground-based computer system (using specialized software) to analyse the data (from single flights and/or in an aggregated format), identify deviations from expected performance, generate reports to assist in interpreting the read-outs, etc.; and
- d. Optional software for a flight animation capability to integrate all data, presenting it as a simulation of in-flight conditions, thereby facilitating visualization of actual events.

41.3.3 AIRBORNE EQUIPMENT

- a. Modern glass-cockpit and fly-by-wire aircraft are equipped with the necessary digital data buses from which information can be captured by a recording device for subsequent analysis. Older aircraft may be retrofitted to record additional parameters. However, for older (non-digital) aircraft, it is unlikely to be practical to record sufficient parameters to support a viable FDA programme.
- b. The number of parameters recorded by the mandatory FDR may determine the scope of an FDA programme. Unfortunately, in some cases the number of parameters and recording capacity required by law to be recorded to support accident investigations may be insufficient to support an effective FDA programme. Thus many operators are opting for additional recording capacity, capable of being easily downloaded for analysis.
- c. Quick access recorders (QAR) are installed in the aircraft and record flight data onto a low-cost removable medium such as tape cartridge, optical disk, or solid-state recording medium. The recording can be removed from the aircraft after a series of flights. New technology QARs are capable of supporting more than 2,000 parameters at much higher sampling rates than the FDR. The expanded data frame greatly increases the resolution and accuracy of the output from ground analysis programmes.
- d. To eliminate the task of moving the data from the aircraft to the ground station by physically removing the recording medium of the QAR, newer systems automatically download the recorded information via secure wireless systems when the aircraft is in the vicinity of the gate. In still other systems, the recorded data is analysed on-board while the aircraft is airborne. The encrypted data is then transmitted to a ground station using satellite communications.

41.3.4 GROUND REPLAY & ANALYSIS EQUIPMENT

- a. Data is downloaded from the recording device into a central replay and analysis department, where the data is held securely to protect this sensitive information. A variety of computer platforms, including networked PCs, are capable of hosting the software needed to replay the recorded data. Replay software is commercially available, however, the computer platform will require front-end interfaces (usually provided by the recorder manufacturers) to cope with the variety of QAR, FDR and other inputs available today.
- b. FDA programmes generate large amounts of data requiring specialized analytical tools. These tools, which are commercially available, facilitate the routine analysis of flight data in order to reveal situations that require corrective action.

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- c. The analysis software checks the downloaded flight data for abnormalities. The Exceedance detection software typically includes a large number of trigger logic expressions derived from a variety of sources, such as, flight performance curves; standard operating procedures; engine manufacturers' performance data; airfield layout and approach criteria. Trigger logic expressions may be simple exceedances, such as redline values.
- d. However, the majority are composites which define a certain flight mode, aircraft configuration or payload-related condition. Analysis software can also assign different sets of rules dependent on airport or geography. For example, noise sensitive airports may use higher than normal glide slopes on approach paths over populated areas.
- e. Events and measurements can be displayed on a ground computer screen in a variety of formats. Recorded flight data is usually shown in the form of colour-coded traces and associated engineering units, cockpit simulations or animations of the external view of the aircraft.

41.4 FDA PROCESS

41.4.1 Typically, operators follow a closed-loop process in applying an FDA programme—

41.4.2 BASELINE ESTABLISHED

- a. Initially, operators establish a baseline of operational parameters against which changes can be detected and measured.
 - a. Example: Rate of unstable approaches, or hard landings.

41.4.3 UNUSUAL OR UNSAFE CIRCUMSTANCES HIGHLIGHTED

- a. The user determines when non-standard, unusual or basically unsafe circumstances occur; by comparing them to the baseline margins of safety, the changes can be quantified.
 - a. Example: Increases in unstable approaches (or other unsafe events) at particular locations.

41.4.4 UNSAFE TRENDS IDENTIFIED

- a. Based on the frequency of occurrence, trends are identified. Combined with an estimation of the level of severity, the risks are assessed to determine which may become unacceptable if the trend continues.
 - a. Example: A new procedure has resulted in high rates of descent that are nearly triggering GPWS warnings.

41.4.5 RISKS MITIGATED

- a. Once an unacceptable risk has been identified, appropriate risk mitigation actions are decided and implemented.

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- a. Example: Having found high rates of descent, the Standard Operating Procedures (SOPs) are changed to improve aircraft control for optimum/maximum rates of descent.

41.4.6 EFFECTIVENESS MONITORED

- a. Once a remedial action has been put in place its effectiveness is monitored, confirming that it has reduced the identified risk and that the risk has not been transferred elsewhere.
 - a. Example: Confirm that other safety measures at the airfield with high rates of descent do not change for the worse after changes in approach procedures.

41.4.7 ANALYSIS & FOLLOW-UP

- a. FDA data are usually compiled on a monthly basis. The data should then be reviewed by a working group — looking for specific exceedances and for emerging undesirable trends and for dissemination of information to flight crews.
- b. If deficiencies in pilot handling technique are evident, the information is de-identified in order to protect the identity of the flight crew. The information on specific exceedances is passed to an agreed aircrew representative for confidential discussion with the pilot. The aircrew representative provides the necessary contact with the pilot in order to clarify the circumstances, obtain feedback, and give advice and recommendations for appropriate action, such as: retraining for the pilot (carried out in a positive and non-punitive way); revisions to operating and flight manuals; changes to ATC and airport operating procedures; etc.
- c. As well as reviewing specific exceedances, all events are archived in a database. The database is used to sort, validate and display the data in easy-to-understand management reports. Over time, this archived data can provide a picture of emerging trends and hazards which would otherwise go unnoticed. Where the development of an undesirable trend becomes evident (within a fleet, or at a particular phase of flight, or airport location), the fleet's training department can implement measures to reverse the trend through modification of training exercises and/or operating procedures. Likewise with other areas of the operation requiring action, the data can then be used to confirm the effectiveness of any action taken.
- d. Lessons learned from the FDA programme may warrant inclusion in the company's safety promotion programmes. However, care is required to ensure that any information acquired through FDA is studiously de-identified before using it in any training or promotional initiative.
- e. As in any closed-loop process, follow-up monitoring is required to assess the effectiveness of any corrective actions taken. Flight crew feedback is essential for the identification and resolution of safety problems. For example:



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- a. Are the desired results being achieved soon enough;
 - b. Have the problems really been corrected, or just relocated to another part of the system; and
 - c. Have new problems been introduced.
- f. All successes and failures should be recorded, comparing planned programme objectives with expected results. This provides a basis for review of the FDA programme and the foundation for future programme development.

41.5 CONDITIONS FOR EFFECTIVE FDA PROGRAMMES

41.5.1 Following are several conditions that are fundamental to successful FDA programmes.

41.5.2 PROTECTION OF FDA DATA

- a. Airline management and pilots both have legitimate concerns regarding the protection of FDA data, for example:
 - a. Use of data for disciplinary purposes;
 - b. Use of data for enforcement actions against individuals or against the company, except in cases of criminal intent or intentional disregard of safety;
 - c. Disclosure to the media and the general public under the provisions of State laws for access to information; and
 - d. Disclosure during civil litigation.
- b. The integrity of FDA programmes rests upon protection of the FDA data. Any disclosure for purposes other than accident prevention can compromise the voluntary provision of FDA data, thereby compromising flight safety. Thus, the prevention of misuse of FDA data is a common interest of the State, the airlines and the pilots.

41.5.3 ESSENTIAL TRUST

- a. As with any successful incident reporting system, the trust established between management and its pilots is the foundation for a successful FDA programme. This trust can be built on:
 - a. Early participation of the pilots' association in the design, implementation and operation of the FDA programme;
 - b. A formal agreement between management and the pilots identifying the procedures for the use and protection of data; and
 - c. Data security, optimized by:
 - Adhering to stringent agreements with the pilots' associations;
 - Strictly limiting data access to selected individuals within the company;
 - Maintaining tight control to ensure that identifying data are removed from the flight data records as soon as possible;

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- d. Ensuring that operational problems are promptly addressed by management; and
 - e. Destruction of all identified data as soon as possible.
-
- b. Access to crew identification information during follow-up should only be available to specifically authorised persons and only used for the purpose of an investigation. Subsequent to the analysis, the data enabling this identification should be destroyed.

41.5.4 REQUISITE SAFETY CULTURE

41.5.4.1 Consistent and competent programme management characterize successful FDA programmes. Examples of an effective safety culture include—

- a. Top management's demonstrated commitment to promoting a pro-active safety culture, championing the cooperation and accountability of all organizational levels and relevant aviation associations (pilots, cabin staff, engineers, dispatchers, etc.);
- b. A non-punitive company policy. (The main objective of the FDA programme must be to identify hazards, not to identify individuals who may have committed an unsafe act.);
- c. FDA programme management by a dedicated staff within the safety or operations departments with a high degree of specialization and logistical support;
- d. Potential risks are identified through the correlation of the results of the analysis by persons with appropriate expertise. (For example, pilots experienced on the aircraft type being analysed are required for the accurate diagnosis of operational hazards emerging from FDA analyses.);
- e. Primary focus on monitoring fleet trends aggregated from numerous operations rather than on specific events; the identification of systemic issues adds more value for accident prevention than (perhaps isolated) events;
- f. A well-structured, de-identification system to protect the confidentiality of the data; and
- g. An efficient communication system for disseminating hazard information (and subsequent risk assessments) to relevant departments and outside agencies to permit timely safety action.

41.6 IMPLEMENTING AN FDA PROGRAMME

41.6.1 Typically, the following steps are required to implement an FDA programme—

- a. Implementation of pilot association agreements;
- b. Establishment and verification of operational and security procedures;
- c. Installation of equipment;
- d. Selection and training of dedicated and experienced staff to operate the programme; and
- e. Commencement of data analysis and validation.

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41.6.2 Bearing in mind the time required to get crew/management agreements and procedures developed, a start-up airline with no FDA experience would not likely achieve an operational system in less than 12 months.

41.6.3 Another year may be required before any safety and cost benefits appear. Improvements in the analysis software, or the use of outside specialist service providers, may shorten these time frames.

41.6.4 Integrating the FDA programme with other safety monitoring systems into a coherent safety management system will increase the potential benefits. Safety information gathered from other programmes of the SMS gives context to the FDA data. In turn, FDA can provide quantitative information to support investigations that otherwise would be based on less reliable subjective reports.

41.6.5 AIMS & OBJECTIVES OF AN FDA PROGRAMME

41.6.5.1 Define Objectives of Programme

- a. As with any project there is a need to define the direction and objectives of the work. A phased approach is recommended so that the foundations are in place for possible subsequent expansion into other areas. Using a building block approach will allow expansion, diversification and evolution through experience.
 - Example: With a modular system begin by looking at basic safety related issues only. Add engine health monitoring etc. in the second phase. Ensure compatibility with other systems.

41.6.6 SET BOTH SHORT & LONG TERM GOALS

41.6.6.1 A staged set of objectives starting from the first week's replay and moving through early production reports into regular routine analysis will contribute to a sense of achievement as milestones are met—

a. Short Term

- Establish data download procedures, test replay software and identify aircraft defects;
- Validate and investigate Exceedance data; and
- Establish a user-acceptable routine report format to highlight individual exceedances and facilitate the acquisition of relevant statistics.

b. Medium Term

- Produce annual report - include key performance indicators;
- Add other modules to analysis (e.g. Continuing Airworthiness); and
 - Plan for next fleet to be added to programme.

c. Long Term

- Network FDA information across all company safety information systems;

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- Ensure FDA provision for any proposed advanced training programme; and
- Use utilization and condition monitoring to reduce spares holdings.

d. Initially, focusing on a few known areas of interest will help prove the system's effectiveness. In contrast to an undisciplined "scatter-gun" approach, a focused approach is more likely to get early successes.

2.1.6.6.2 Example: Rushed approaches, or rough runways at particular airports; unusual fuel usage on particular flight segments; etc. Analysis of such known problem areas may generate useful information for the analysis of other areas.

41.6.7 THE FDA TEAM

41.6.7.1 Experience has shown that the "team" required to run an FDA programme could vary in size from one person with a small fleet (5 aircraft), to a dedicated section for large fleets. The descriptions below identify various functions to be fulfilled, not all of which need a dedicated position. For example, engineering may provide only part time support.

41.6.7.2 All FDA team members require appropriate training or experience for their respective area of data analysis. Each team member must be allocated a realistic amount of time to regularly spend on FDA tasks. With insufficient available manpower, the entire programme will underperform or even fail.

- a. **Team leader.** Team leaders must earn the trust and full support of both management and flight crews. They act independently of other line management to make recommendations that will be seen by all to have a high level of integrity and impartiality. The individual requires good analytical, presentation and management skills.
- b. **Flight operations interpreter.** This person normally is a current pilot (or perhaps a recently retired senior Captain or trainer), who knows the company's route network and aircraft. Their in-depth knowledge of SOPs, aircraft handling characteristics, airfields and routes will be used to place the FDA data in a credible context.
- c. **Technical interpreter.** This person interprets FDA data with respect to the technical aspects of the aircraft operation. He is familiar with the power plant, structures and systems departments' requirements for information and any other engineering monitoring programmes in use by the airline.
- d. **Aircrew representative.** This person provides the link between the fleet or training managers and flight crew involved in circumstances highlighted by FDA. The position requires good people skills and a positive attitude towards safety education. The person is normally a representative of the flight crew association and should be the only person permitted to connect the identifying data with the event. The aircrew representative requires the trust of both crewmembers and managers for their integrity and good judgment.

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- e. **Engineering technical support.** This person is normally an avionics specialist, involved in the supervision of mandatory serviceability requirements for FDR systems.

They must be knowledgeable about FDA and the associated systems needed to run the programme.
- f. **Air safety coordinator.** This person cross-references FDA information with other air safety monitoring programmes (such as the company's mandatory or confidential incident reporting programmes), creating a credible integrated context for all information. This function can reduce duplication of follow-up investigations.
- g. **Replay operative and administrator.** This person is responsible for the day-to-day running of the system, producing reports and analysis. Methodical, with some knowledge of the general operating environment, this person keeps the programme moving.

41.7 OFF-THE-SHELF PACKAGES

- 41.7.1 The QARs available on most large, modern aircraft can be analysed on a suitably configured replay and analysis system. Even though the operators themselves can configure the various event equations and Exceedance levels, suppliers of ground replay software offer both starter packs and advanced flight operations monitoring programmes for a variety of different aircraft types. It is not normally cost-effective for new operators to configure FDA systems themselves, although most suppliers will review the relevance and levels of event triggers with each new operator.
- 41.7.2 Some aircraft manufacturers actively support FDA programmes for their aircraft. They provide airlines with packages including tools and software, handbooks to support their flight data analysis methods and procedures, and additional assistance for operators implementing their programme. (They see the sharing of data and information provided by the airline as a means for improving their aircraft, SOPs and training.)
- 41.7.3 Most system vendors provide one year of maintenance and support in the original package but charge an annual fee thereafter. In addition, other cost factors to be considered by prospective purchasers include—
 - a. Installation costs;
 - b. Training costs;
 - c. Software upgrade costs (often included in the maintenance contracts); and
 - d. Other software licence fees that may be necessary.
- 41.7.4 FDA programmes are often viewed as one of the most expensive safety systems in terms of the initial outlay, software agreements and personnel requirements. In reality, they have the potential to save the company considerable money by reducing the risk of a major accident, improving operating standards, identifying external factors affecting the operation and improving engineering monitoring programmes.

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Appendix 41A

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Flight Data Analysis Program Inspection/Report
CAA/OP/CL/062

OPERATOR:	DATE:	
LOCATION:	INSPECTOR:	
Items	Status	
	S	U
		Remarks

S-Satisfactory, U-Unsatisfactory, N-Not observed, NA=Not Applicable

1	GENERAL		
1.1	A non-punitive company policy for use of the FDA programme is in place (<i>The main objective of the programme must be to identify the hazards.</i>)		
1.2	There are no indications that the company management has deviated from this policy?		
1.3	There is a formal agreement between management and the pilots identifying the procedures for the use and protection of data?		
1.4	There are no indications that the company management has deviated from this agreement?		
1.5	The FDA programme is managed by a dedicated staff within the safety or operations department with a high degree of specialization and logistical support.		
1.6	There are indications that this programme is viewed in a positive manner by both management and the flight crews?		
2	PROTECTION OF DATA		
2.1	Data has protection from use for disciplinary purposes		
2.2	Data has protection from use in enforcement actions against individuals or against the company, except in cases of criminal intent or intentional disregard of safety?		
2.3	Data has protection from disclosure to the media and the general public under the provisions of state laws for access to information?		



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2.4	Data has protection from disclosure during civil litigation?			
3	DATA SECURITY			
3.1	There is a well-structured, de-identification system in place to protect the confidentiality of the data?			
3.2	Data security policies strictly limit data access to selected individuals within the company			
3.3	Data security requires the maintenance of tight control to ensure that identifying data are removed from the flight data records as soon as possible?			
3.4	Access to crew identification information during follow up is available only to specifically authorized persons and used only for the purpose of an investigation?			
3.5	The data enabling the crew identification is to be destroyed after initial analysis for exceedances?			
4	FDA PROGRAMME IMPLEMENTATION			
4.1	Has the operator established a baseline of operational parameters against which changes can be detected and measured.			
4.2	Are non-standard, unusual or basically unsafe circumstances compared to the baseline margins of safety and the observed changes quantified?			
4.3	Are unsafe trends identified and the inherent risks assessed to determine the need for mitigation actions?			
4.4	When unacceptable risk are identified, appropriate risk mitigation actions are decided and implemented?			
4.5	Once a remedial action has been put in place, its effectiveness is monitored, confirming that it has reduced the identified risk and that the risk has not been transferred elsewhere?			
5.	REGULAR ANALYSIS & FOLLOWUP			
5.1	FDA data are compiled on a regular basis (at least monthly)?			
5.2	Data is then reviewed by a working group to identify specific exceedances and emerging undesirable trends?			
5.3	The initial analysis for operational exceedances are conducted promptly after extracting the data from the aircraft?			



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5.4	Data information and trends are then disseminated to the flight crews in a de-identified form?			
5.5	The information on specific exceedances is passed to an agreed aircrew representative for confidential discussion with the pilot?			
5.6	The aircrew representative provides the necessary contact with the pilot in order to clarify the circumstances, obtain feedback, and give advice and recommendations for appropriate action,			
6	DATABASE ARCHIVE & ANALYSIS			
6.1	All events are archived in a compatible database?			
6.2	Database is used to sort, validate and display the data in easy-to understand management reports?			
6.3	Database is used to identify patterns and trends across the fleets?			
6.4	Is a specific organization and manager responsible for the monitoring and identification of the pattern and trends on an on-going basis?			
6.5	Where the development of an undesirable trend becomes evident (within a fleet, or at a particular phase of flight, or airport location), does the operator implement measures to reverse the trend?			
6.6	Are the implemented measures monitored for successful impact and unintended consequences?			



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Chapter 42 - ELECTRONIC FLIGHT BAG

42.1 The introduction and use of EFBs in the Cockpit require authorization from FSD, DGCA. This requirement includes DGCA evaluation of all operating procedures, pertinent training modules, checklists, operations manuals, training manuals, maintenance programs, minimum equipment lists (MEL), other pertinent documents, and reporting procedures.

42.2 Operations Circular 5 of 2014 contains the means to obtain Airworthiness and Operational approval for EFBs and will be used by the Inspector. The checklist in Appendix 42 will be used for the operational approval process.

42.2.1 Phase One: Request Authorization:

- (a) Phase one of the process begins when the operator requests authorization from a regulator to use the EFB. It should be noted that use of the EFB prior to operational approval does not imply any deviation from the operator's present procedures. It simply defines a training phase which will eventually lead to paperless trials.
- (b) During this phase, the regulator and the operator reach a common understanding of when paperless trials should begin, how they must be conducted and documented, the role of the regulator, and what documents and actions the operator is responsible for during each phase of the authorization process. Phase one is typically applicable when the operator transition from paper to a paperless flight deck; and may not be required by the DGCA.

42.2.2 Phase Two: Application

- (a) Phase Two begins when the operator submits a formal compliance plan to FSD, DGCA for evaluation. The plan is reviewed for completeness and FSD, DGCA may coordinate with other inspectors and regulatory offices as necessary. Once the plan is accepted, the operator follows that plan to produce a complete EFB program. The operator must clarify the intent of the operation (with or without paper back-up or a combination of paperless and paper). The applicant user should submit the following information in the application package:
 - (i) EFB hardware and application specification EFB operator procedures/manual revisions, EFB cockpit procedures checklists,
 - (ii) EFB training program,
 - (iii) EFB RD test data (when required), Complete non-interference test results,
 - (iv) Airworthiness documents for installed resources, EFB evaluation report, (v) Operational risk analysis



42.2.3 Phase Three: Review

- (a) DGCA should conduct a review of the application submitted by an operator. All assigned regulatory specialties should participate in the review of an operator's EFB program. DGCA should participate in the simulator evaluation or flight evaluation of an EFB when an operator is requesting initial EFB authorization. Additional simulator or flight evaluations are not required for adding a new EFB to an existing authorization unless there is a substantial change in EFB intended functions. When a new aircraft is added to a certificate with existing EFB authorization, the suitability of the EFB for that aircraft must be addressed as part of the aircraft conformity and configuration control process. DGCA should examine the technical content and quality of the proposed EFB program and other supporting documents and procedures. The operator's program for EFB management is critical to EFB reliability. The EFB program must address all EFB issues and be well documented.

42.2.4 Phase Four: Interim Authorization to Use EFB

- (a) An interim EFB authorization may be granted to allow the operator to proceed with EFB validation testing.
- (b) For operator transitioning from paper to EFB, during this validation phase, the operator must maintain paper back-up for all electronic information. The validation phase begins when the operator formally begins use of the EFB combined with paper backup for an established period of time.
- (c) For operators starting EFB operations without paperback-up, they must have in place adequate mitigations means to access the information in case of EFB failures, that are accepted by the DGCA.
- (c) Final considerations by DGCA:
 - i) Unacceptable Validation Results. If the DGCA finds the proposed EFB reliability and/or function to be unacceptable, the DGCA should contact the operator for corrective action. EFB deficiencies should be corrected and the EFB function revalidated prior to paperless authorization being issued.
 - (ii) Acceptable Validation Results. If the DGCA finds the proposed EFB reliability and/or function to be acceptable based on validation data then paperless authorization may be issued.

42.2.5 Phase Five: Authorization to Use EFB

- (a) A formal letter is issued by the regulatory authority granting use of the EFB to the operator. Additionally, the approval of a "paperless flight deck" should be added to the authorization, if it was included as a part of the Ops Evaluation. The initial authorization should define criteria for changes to the EFB system which may require consideration of an amended authorization

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APPENDIX 42 A

CHECKLIST FOR THE APPROVAL OF ELECTRONIC FLIGHT BAGS

Checklist no CAA/ OPS/CL.....

1. INTRODUCTION

- 1.1 The checklists below constitute an example of what may be used during Phase 3 (authority review) of the EFB operational evaluation process
- 1.2 Checklist items can be customized to the specific EFB and applications being evaluated
- 1.3 Checklist items are designed so that some questions may be not applicable (check “N/A”). Questions answered as “No” are meant to allow identifying deficiencies that should be corrected and revalidated prior to approval being issued.

Operator:

Date;

Part I

1.	HARDWARE	
1.1	Have the installed EFB resources been certified by a CAA to accepted aviation standards either during the certification of the aircraft, service bulletin by the original equipment manufacturer, or by a third-party STC?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.2	Has the operator assessed the physical use of the device on the flight deck to include safe stowage, crashworthiness (mounting devices and EFBs, if installed), safety and use under normal environmental conditions including turbulence?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.3	Will the display be readable in all the ambient lighting conditions, both day and night, encountered on the flight deck?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.4	Has the operator demonstrated that the EFB will not electromagnetically interfere with the operation of aircraft equipment?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.5	Has the EFB been tested to confirm operation in the anticipated environmental conditions (e.g. Temperature range, low humidity, altitude, etc.)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.6	Have procedures been developed to establish the level of battery capacity degradation during the life of the EFB?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>



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1.7	Is the capability of connecting the EFB to certified aircraft systems covered by an airworthiness approval?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.8	When using the transmitting functions of a portable EFB during flight, has the operator ensured that the device does not electromagnetically interfere with the operation of the aircraft equipment in any way?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.9	If two or more EFBs on the flight deck are connected to each other, has the operator demonstrated that this connection does not negatively affect otherwise independent EFB platforms?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.10	Can the brightness or contrast of the EFB display be easily adjusted by the flight crew for various lighting conditions?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

Part II

2.	INSTALLATION	
	2.1	
	Mounting	
2.1.1	Has the installation of the mounting device been approved in accordance with the appropriate airworthiness regulations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.2	Is it evident that there are no mechanical interference issues between the EFB in its mounting device and any of the flight controls in terms of full and free movement, under all operating conditions and no interference with other equipment such as buckles, oxygen hoses, etc.?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.3	Has it been confirmed that the mounted EFB location does not impede crew ingress, egress and emergency egress path?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.4	Is it evident that the mounted EFB does not obstruct visual or physical access to aircraft displays or controls?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.5	Does the mounted EFB location minimize the effects of glare and/or reflections?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.6	Does the mounting method for the EFB allow easy access to the EFB controls and a clear unobstructed view of the EFB display?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.7	Is the EFB mounting easily adjustable by flight crew to compensate for glare and reflections?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2.1.8	Does the placement of the EFB allow sufficient airflow around the unit, if required?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>



Part III

Note. – This part should be completed multiple times to account for the different software applications being considered.

3.	SOFTWARE	
3.1		
Software application: _____ (fill in name of software application)		
3.1.1	Is the application considered an EFB function (see Chapter 6)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.2	Has the software application been evaluated to confirm that the information being provided to the pilot is a true and accurate representation of the documents or charts being replaced?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.3	Has the software application been evaluated to confirm that the computational solution(s) being provided to the pilot is a true and accurate solution (e.g. performance, and mass and balance (M&B), etc.)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.4	Does the software application have adequate security measures to ensure data integrity (e.g. preventing unauthorized manipulation)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.5	Does the EFB system provide, in general, a consistent and intuitive user interface, within and across the various hosted applications?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.6	Has the EFB software been evaluated to consider HMI and workload aspects?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.7	Does the software application follow Human Factors guidance?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.1.8	Can the flight crew easily determine the validity and currency of the software application and databases installed on the EFB, if required?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.2		
Power connection / batteries		
3.2.1	Is there a means other than a circuit-breaker to turn off the power source (e.g. can the pilot easily remove the plug from the installed outlet)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.2.2	Is the power source suitable for the device?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.2.3	Have guidance/procedures been provided for battery failure or malfunction?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.2.4	Is power to the EFB, either by battery and/or supplied power, available to the extent required for the intended operation?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>



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3.2.5	Has the operator ensured that the batteries are compliant to acceptable standards?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.3 Cabling		
3.3.1	Has the operator ensured that any cabling attached to the EFB, whether in the dedicated mounting or when hand-held does not present an operational or safety hazard (e.g. it does not interfere with flight controls movement, egress, oxygen mask deployment, etc.)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.4 Stowage		
3.4.1	If there is no mounting device available, can the EFB be easily stowed securely and readily accessible in flight?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.4.2	Is it evident that stowage does not cause any hazard during aircraft operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.5 Viewable stowage		
3.5.1	Has the operator documented the location of its viewable stowage?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.5.2	Has the operator ensured that the stowage characteristics remain within acceptable limits for the proposed operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.5.3	Has the operator demonstrated that if the EFB moves or is separated from its stowage, or if the viewable stowage is unsecured from the aircraft (as a result of turbulence, maneuvering, or other action), it will not interfere with flight controls, damage flight deck equipment, or injure flight crew members?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

Part IV

4.	MANAGEMENT	
4.1 EFB management		
4.1.1	Is there an EFB management system in place?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.1.2	Does one person possess an overview of the complete EFB system and responsibilities within the operator's management structure?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.1.3	Are the authorities and responsibilities clearly defined within the EFB management system?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.1.4	Are there adequate resources assigned for managing the EFB?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
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	Are third parties (e.g. software vendor) responsibilities clearly defined?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2		
Crew procedures		
4.2.1	Is there a clear description of the system, its operational philosophy and operational limitations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.2	Are the requirements for EFB availability in the operations manual and/or as part of the minimum equipment list (MEL)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.3	Have crew procedures for EFB operation been integrated within the existing operations manual?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.4	Are there suitable crew cross-checks for verifying safety-critical data (e.g. performance, mass & balance (M&B) calculations)?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.5	If an EFB generates information similar to that generated by existing flight deck systems, do procedures identify which information will be primary?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.6	Are there procedures when information provided by an EFB does not agree with that from other flight deck sources, or, if more than one EFB is used, when one EFB disagrees with another?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.7	Are there procedures that specify what actions to take if the software applications or databases loaded on the EFB are out of date?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.8	Are there procedures in place to prevent the use of erroneous information by flight crews?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.9	Is there a reporting system for system failures?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.10	Have crew operating procedures been designed to mitigate and/or control additional workload created by using an EFB?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.2.11	Are there procedures in place to inform maintenance and flight crews about a fault or failure of the EFB, including actions to isolate it until corrective action is taken?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.3		
EFB risk assessment		
4.3.1	Has an EFB risk assessment been performed?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.3.2	Are there procedures/guidance for loss of data and identification of corrupt/erroneous outputs?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.3.3	Are there contingency procedures for total or partial EFB failure?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>



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Inspector's Name;

Signature;



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Chapter 43 – Continuing Safety Oversight Programme for AOC Holders of Sri Lanka

1. Continuing safety oversight of the CAASL Air Operators Certificate and Foreign Air Operator Certificate holders is an integral system of the safety oversight responsibilities of the Flight Safety Division to ensure safe, secure, efficient and regular flight operations in Sri Lanka.
2. According to section 73 of CAA Act 14 of 2010, the DGCA has the authority and the responsibility for exercising continuing safety oversight of air transport operations to ensure that accepted safety practices and proper procedures for the promotion of safety in operations are maintained.
3. To achieve this objective, the FSR division of CAASL is responsible for continuously monitoring operations conducted by each operator, through the annual Surveillance Plan approved by the DGCA. It should be emphasized that such surveillance could result in the revision of operations specifications or in the temporary suspension of an AOC and, in an extreme case, could result in the revocation of an AOC as mentioned in SLCAP 4100, Chapter 1 – Section 3
4. All inspectors authorized to conduct safety oversight need to be in possession of credentials and the Delegation of authority issued by the DGCA. They shall be fully aware of the nature and scope of authority granted to the airline for operation into and out of Sri Lanka.
5. The safety oversight of operators is to be conducted on a continuous basis and random inspections should be carried out based on the risk factors identified during the previous inspection of the operators.
6. The areas to be covered in the surveillance activities over a period of time should be similar to those examined during the original certification process. They should include at least a re-evaluation of the operator's organization, management effectiveness and control, facilities, equipment, aircraft maintenance, operational control and supervision, maintenance of flight and cabin crew standards, passenger and cargo safety procedures, dangerous goods procedures, security procedures, operational and personnel records, training, company manuals, financial viability and record of compliance with the provisions of the AOC, the associated operations specifications and pertinent operating regulations and rules. During the surveillance activities CAA inspectors should conduct inspections on all areas that they see an impact on safety. They may be guided by the checklists in the Inspector Handbook.
7. All safety oversight activity with respect to a particular operator should be carefully planned. It will not be possible to cover all aspects of an operation during every inspection, but as much as possible should be covered over a specific period of time, and appropriate records should be maintained. Inspections should also be planned on the basis of a risk assessment exercise so that aspects of the operation that involve the greatest risk should receive more frequent

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attention. The planning of inspections by the inspectors should take into account the results of the hazard identification and risk assessment conducted and maintained by the operator as part of the operator's SMS.

43.1 SAFETY OVERSIGHT PROGRAMME

1. CAA inspectors should be particularly alert to any irregular procedures, evidence of inadequate facilities or equipment, or indications that management control of the operation may be ineffective. They should also carefully examine any conditions that may indicate a significant deterioration in the operator's financial condition. Examples of trends which may indicate problems in a new operator's financial condition are:
 - a) significant lay-offs or turnover of personnel;
 - b) delays in meeting payroll;
 - c) reduction of safe operating standards;
 - d) decreasing standards of training;
 - e) withdrawal of credit by suppliers;
 - f) inadequate maintenance of aircraft;
 - g) shortage of supplies and spare parts
 - h) sale or repossession of aircraft or other major equipment items.
 - i) curtailment or reduced frequency of revenue flights and;
 - j) previous findings of inspections and audits
2. When any financial difficulties are identified, CAA inspectors should increase technical surveillance of the operation with particular emphasis on the upholding of safety standards. The inspectors should also refer the matter to the DGCA for any action deemed necessary, such as a financial audit.
3. During the certification process, the CAA inspector will have determined the methods, systems or procedures that the operator intended to use to ensure compliance with the applicable regulations, the AOC and its associated operations specifications and the operator's operations and MCMs. A prime objective of the safety oversight programme is to confirm that such methods, systems or procedures are being followed and are effective in the demonstration of operator compliance and achievement of safety objectives.
4. Aircraft leases and contractual arrangements entered into by the operator for training, aircraft maintenance or servicing, etc., need to be thoroughly reviewed and a determination

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made of whether these arrangements are producing satisfactory results as far as the maintenance of safety standards and regulatory compliance are concerned.

5. The training programme should also come under close scrutiny during oversight to ensure that the training standards, which were demonstrated when the programme was initially approved, are being maintained. If there are indications that the training provided is not achieving the desired training objectives, or has resulted in a high failure rate on various tests or examinations, CAA inspectors need to make certain that the operator revises the training programme to ensure that trainees will reach the required level of competence. This evaluation should be conducted, where possible, by an inspector qualified on the specific type of aircraft utilized by the operator. The evaluation may be accomplished either during an instrument rating or a proficiency check in an aircraft or a flight simulation training device approved for the purpose.
6. Flight crew approved as designated examiners need to satisfactorily demonstrate knowledge of the aircraft and related systems, operator procedures, authorized route structure and pertinent regulations. Such individuals are to also demonstrate competency in evaluating the performance of other flight crew members. The personal ability and integrity of flight crew approved as designated examiners should be exemplary and their requirement for the prescribed standard of performance from flight crew being tested should not be in doubt. A similar but less thorough process is required for the oversight of operator flight crew approved only for line check functions.
7. As indicated previously, the oversight function should be accomplished on a continuing basis, planned and performed at specified times or intervals, or conducted in conjunction with the renewal of an AOC. Regardless of the method used, all significant aspects of the operator's procedures and practices should be evaluated and appropriate inspections, commensurate with the scale of the operator's activities, conducted at least once every 12 months.
8. The safety oversight programme of an operator should:
 - a) establish that the operator has conducted, and is likely to continue to conduct, operations in accordance with good operating practices, the AOC's operations specifications, operations and MCMs and the relevant operating regulations and rules;
 - b) ensure that all changes in the applicable operating regulations and rules, in any amendments to the AOC or associated operations specifications, or otherwise any improvements in operating procedures, are put into practice and reflected in appropriate amendments to the operations manual or the MCM;
 - c) keep the DGCA informed of the competency, current operating practices and record of compliance of the operator;



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d) afford the DGCA the opportunity to recommend CAA regulatory or policy changes if the safety oversight inspections indicate such action would result in improvements in operating safety standards in general; and

e) establish whether the exercise of the privileges of an AOC and the associated operations specifications by a particular operator should be continued, made the subject of further operating limitations, or be suspended or revoked.

9. Throughout all phases of the surveillance programme, the standards of capability and competence should equal or exceed that required at the time of original certification of the operator. CAA inspectors conducting surveillance and related inspections should carry out such activities in a thorough manner and require the operator to convincingly demonstrate that operations are being conducted in accordance with the AOC and associated operations specifications, the operator's manuals and appropriate civil aviation regulations.

10. In summary, the safety oversight programme should provide a comprehensive and conclusive assessment of an operator's continuing competence. Moreover, the associated inspection reports should indicate whether the safety oversight system and procedures employed by the CAA are effective in determining an operator's competence, record of compliance and overall capability

43.2 SURVEILLANCE PROGRAMME FOR FOREIGN AIR OPERATOR CERTIFICATE HOLDERS

The surveillance of foreign air operators will be according to requirements specified in Chapter 4 of SLCAP 4105 and the Directive issued by DGCA Reference AT/07/01/05, which is in Appendix 1 to Chapter 43



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APPENDIX 43A

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இலங்கை சிவில் விமானப் போக்குவரத்து அதிகார சபை
Civil Aviation Authority of Sri Lanka

සුළු හා සුදුසු සඳහා සඳහා සඳහා
அளவளவுக்கும் ஆபத்தற்ற திறன்மிக்க ஆகாபம்
" Safe and Efficient skies for all "

අංක 152/1, මිනුවන්ගොඩ පාර, කටුනායක
152/1, மினுவங்கொடை வீதி, கட்டுநாயக்க
Minuwangoda Road, Katunayake

දිනය : 10 May 2018
திகதி :
Date :

මගේ අංකය : AT/07/01/05
எனது இல :
My Ref. No :

Ref. No. AT/01/2018

DIRECTIONS

(ISSUED BY DGCA UNDER CIVIL AVIATION ACT NO.14 OF 2010)

Issued by	DGCA & CEO	Classification	Important
Issued to	All Sri Lankan AOC Holders, All Foreign Codeshare Partners of Sri Lanka AOC Holders		
Subject	Acceptance of IOSA (IATA Operational Safety Audit) Program for Partners of Codeshare Operations		
Legal Reference	This direction is issued under the powers vested in the Director General of Civil Aviation in terms of Section 94, 99 and 121 of the Civil Aviation Act No. 14 of 2010.		
Description of the direction	<p>As per Chapter 4 of Part V of ICAO guidelines prescribed in DOC 8335 (Manual of Procedures for Operations Inspections, Certification), in deciding whether to authorize a code share arrangement, the State of the Operator should consider whether the arrangement is in the public interest and such determination should include the consideration of whether the operations of such foreign operators meet an acceptable level of safety.</p> <p>ICAO recommends that in making these safety determinations, the State of the Operator permitting such code share arrangements to conduct safety audits on the foreign airlines concerned. In lieu of conducting such safety audits on foreign airlines that Sri Lanka AOC holders have chosen to code share with, the Civil Aviation Authority of Sri Lanka can be satisfied if such Sri Lankan AOC holder could provide evidence that its chosen codeshare partner has successfully completed the internationally recognized audit system IATA operational safety audit (IOSA) program.</p> <p>By this directive, all the Sri Lankan AOC holders are hereby instructed to:</p>		



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1. Submit IOSA reports for every foreign Airline they are currently code sharing or intending to provide codeshare services in the future. The partner airlines who have not completed a valid IOSA report will not be entitled to provide code share services with any Sri Lanka AOC holder.
2. Monitor the foreign partner Airlines on an ongoing basis for the following
 - A. Accident/incident rates;
 - B. The partner's financial conditions, ownership and economic condition
 - C. The partner's management, operating history, current organization, sophistication and stability (including any turnover of key personnel, strikes, etc.)
 - D. Age of equipment, equipment on order and equipment being returned;
 - E. Operational capabilities (e.g. international service as compared to only domestic service) and established infrastructure (e.g. approved maintenance and repair facilities, and flight simulation training devices)
 - F. The interface and cooperation between codeshare partners, including familiarity with personnel, sharing of data through meetings, conferences, etc.

Action
Required

For Strict compliance

 H.M.C. Nimal Siri Director General of Civil Aviation & Chief Executive Officer	Enclosures, if any	Nil
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Chapter 44 – Resolution of Safety Concerns

44.1 Inspection Report Dissemination Process

The inspection report dissemination process and corrective action plan filing process entails two (02) layers. The first layer include the report preparation and validating the report where necessary for the dissemination to the operator and the second layer include the receiving of the corrective action plan(s) (CAPs) from the operators to address the inspection findings. The Figure 2 below illustrates the process followed by the CAASL. The operators are expected to send the CAPs as per the template in Table I attached to this Chapter. The inspection report findings are recorded and monitored through the CAP data base maintained under through a centralized system.

44.2 Safety Report

The inspection reporting programme requires the database administrator to:

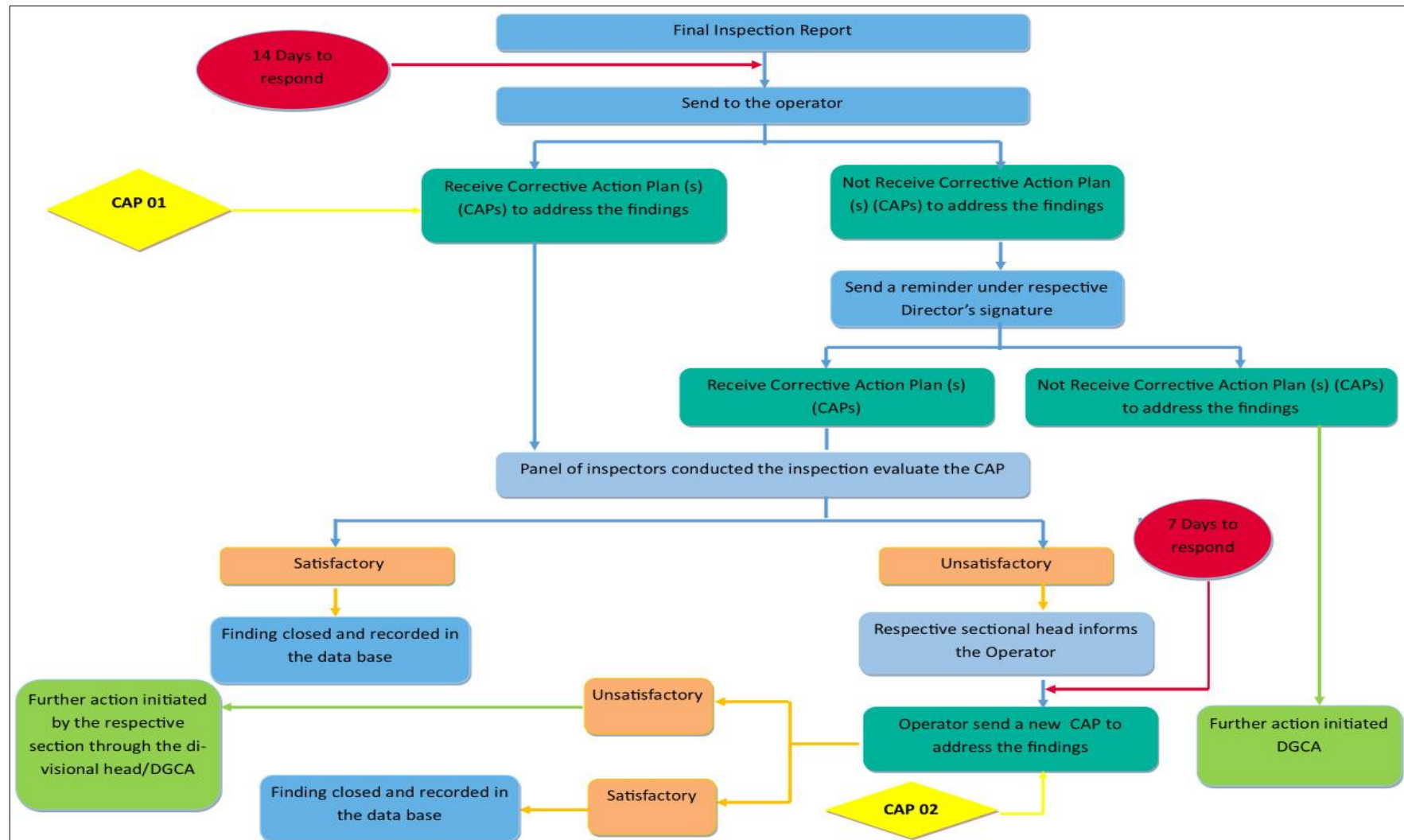
- advise the section/division on immediate actions;
- report potential safety problems and;
- propose coordinated actions to the Ministry of Civil Aviation and DGCA when necessary on safety grounds and ensure co-ordination at the technical level of such actions.

44.3 Enforcement action

Enforcement action shall be taken on errant operators who continually do not address the findings in a timely manner or on operators who do not resolve safety findings during a stipulated period advised by CAASL. The manual on Aviation Enforcement Policy and Procedures Manual SLCAP 5350 stipulate the enforcement action process and the criteria as determined by the DGCA.



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RI#	Reg. Mark	OP	Date of Inspection	Ins. Item	Finding Category	Submitted By	Communicated to operator on	14 Days Passed	Operator Reply Received on	Reply with in Grace Period	1st Reminder Sent on	Supplemental communication Sent on	Answer Satisfactory (Y/N)	Findings closed?	Case Closed by

Table 1: CAP Data Base – Follow-up Template



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